Using Cultural Archetypes in Cross-cultural Management Studies

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Abstract

Studies examining the effects of culture on intentions and behaviors within organizations, as well as of related cross-cultural differences, often focus on either the direct or moderating effect of single cultural value dimensions, or on the moderating effect of country as a proxy of culture. However, culture is a multidimensional construct that does not necessarily entirely correspond to particular countries. Disregarding these realities means turning a blind eye to the possibility of more complex interrelationships between various cultural dimensions, or to the possibility of cultural diversity within countries. This paper advocates the use of cultural archetypes in cross-cultural management studies. The use of cultural archetypes represents a configuration approach to studying culture that incorporates a holistic pattern of multiple cultural dimensions. We utilize individual-level data from 10 countries and identify six cultural archetypes that are present in all these countries. Drawing on an illustrative example of culture's effect on entrepreneurial intention, we outline that a cultural archetype approach can be more suitable for understanding cross-cultural effects than conventional approaches.

INTRODUCTION

A multitude of cultural dimensions is commonly used to describe culture (Taras et al., 2009). However, most studies on culture's influence on intended or actual behaviors in organizations focus on single (independent) cultural dimensions. These studies are therefore limited in that they only address a part of a more comprehensive construct (Earley, 2006). Most studies thus ignore the possibility of more complex interrelationships between different cultural dimensions and their effects on the subject matter in question. Tsui, Nifadkar, and Ou (2007) suggest that using single cultural dimensions to examine how culture influences what individuals do or intend to do does not provide informative insights. Accordingly, these authors recommend a configuration approach that captures the potential interrelationships between single cultural dimensions.

Another measurement issue concerns the use of a country as a proxy of culture. Many authors assume that cultures develop within countries as an artifact of national patterns of formative experiences (Derr and Laurent, 1989) and that national cultures are the chief predictors of employee intentions and behaviors (Schneider, 1989). However, comparative research shows that cultural differences do not necessarily equate with national differences (Easterby-Smith et al., 1995; Elenkov and Kirova, 2008; Fischer and Schwartz, 2011). Hence, it is vital to distinguish clearly between cross-cultural and cross-national conceptualizations, and to understand the concept of culture when studying its impacts.

This paper advocates and illustrates the use of what we call *cultural archetypes* to overcome these measurement issues. Cultural archetypes represent specific configurations of multiple cultural dimensions that can be found within a single country, as well as across countries. In line with Tsui, Nifadkar, and Ou (2007) as well as Tung (2007), we argue that cultural archetypes represent specific configurations of multiple cultural dimensions. Such cultural archetypes differ from each other concerning the intensity of and the interactions between different cultural dimensions. Furthermore, we do not maintain that a cultural archetype necessarily corresponds to a country. Instead, we contend that various cultural archetypes can be found within a single country, as well as across countries; this argument is strongly aligned with that of Tung (2007). We suggest that describing individuals and predicting their intentions according to cultural archetypes is qualitatively superior to drawing on single cultural dimensions or

using countries as proxies. To support our argumentation, we utilize individual-level data from 10 countries. We consider five cultural value dimensions (power distance, collectivism, uncertainty avoidance, masculinity, and long-term orientation) to determine illustrative cultural archetypes. By employing connectivity-based (Ward) and centroid-based (k-means) clustering procedures, we identify six cultural archetypes that are present in all 10 countries. Furthermore, to assess whether using cultural archetypes is more appropriate for measuring culture than using single cultural dimensions or nations, we examine the relative suitability of these measurement approaches for ascertaining the strength of cultural effects in an illustrative model of entrepreneurial intention (i.e. cross-cultural differences have been argued to affect entrepreneurial intentions) (e.g. see Mitchell et al., 2000; Hayton et al., 2002; Liñán and Chen, 2009; Schlaegel et al., 2013).

This paper contributes to the cross-cultural management literature by discussing and examining an alternative, and a potentially more precise, measure for culture: the cultural archetype. Employing archetype-based measures, rather than focusing on independent cultural dimensions, allows us to take into account possible complex interrelationships between the various cultural dimensions. At the same time, this approach challenges a common assumption that individuals are homogenous within countries, and allows for heterogeneity within countries (Tung, 2007). Our approach is therefore in line with, and supports, Au (1999), Dorfman and Howell (1988), Earley (1993; 2006), Markus and Kitayama (1991), Triandis (1995), as well as Tsui, Nifadkar, and Ou (2007). Our study outlines that different cultural archetypes comprising detailed descriptions of culture configurations (Roth, 1992) can be found. Furthermore, our findings suggest that, in our illustrative context of entrepreneurial intention, a configuration approach to studying cultural effects on individuals' intentions is a more accurate way of examining cross-cultural differences than traditional approaches. Therefore, by moving away from considering single cultural dimensions, or nationality as a proxy for understanding how cross-cultural differences affect individuals' intentions, the cultural archetype approach may be considered as a better predictor of variations in such intentions. This understanding of cross-cultural differences is valuable to organizations that operate nationally or internationally.

CROSS-CULTURAL MEASUREMENT CHALLENGES

Culture, the "collective programming of the mind which distinguishes one group from another" (Hofstede, 1980: 25), is commonly viewed as defining the basic values of individuals in a community or society (Matsumoto et al., 2008). This notion of [national] culture is similar to the concept of informal, cognitive institutions (Scott, 1995) as encompassing social values and implicit understandings that guide individual behaviors and which are typically learnt through social interactions by living or growing up in a community or a society (North, 1990; DiMaggio and Powell, 1991; Scott, 1995; Schooler, 1996). In this sense, culture complements the formal, regulatory institutions (e.g. laws) and their enforcement mechanisms, as well as the less formal, normative institutions (e.g. professional standards) (North, 1990; Scott, 1995; Schooler, 1996). These institutions that comprise the social structure within which individuals behave "connote stability but are subject to change processes" (Scott, 1995: 33); over time, the regulatory institutions shape the normative and cognitive ones but, likewise, changes in the cognitive ones affect the regulatory institutions (Schwartz, 2014). Indeed, "the way… institutions are organized, their policies and everyday practices, explicitly or implicitly communicate expectations that express underlying cultural value emphases" (Schwartz, 2014: 7).

However, neither informal nor formal institutions necessarily align with national borders and "operate at different levels of jurisdiction, from the world system to localized interpersonal relationships" (Scott, 1995: 33). On the one hand, global formal institutions (e.g. the UN, OECD) have emerged (Risse, 2002) to establish effective transnational systems of setting standards, reporting, and auditing (Utting, 2002). At the same time, cognitive institutions may vary with different subcultures that exist simultaneously in single countries, and have unique effects on individuals' motivations (Lenartowicz and Roth, 2001). Hence, the locus of institutions deserves careful attention.

Irrespective of their locus, the influence of the three types of institutions on managerial intentions and work behaviors is well recognized (e.g. Kostova, 1999; Parboteeah and Cullen, 2003). Of these institutions, it is [national] culture that has received a great deal of attention with empirical studies that draw on widely varying research approaches suggesting that accounting for differences in culture is

important when designing and implementing effective management practices (e.g. Boyacigiller and Adler, 1991; Hofstede, 1983; Johns, 2006; for an overview, see Kirkman et al., 2006).

Numerous studies (e.g. Hofstede, 1980; Hofstede, 1991; Hofstede et al., 2010; Trompenaars, 1993; House et al., 2004) have identified dimensions that conceptualize [national] culture and can assist in analyzing cultural differences (Taras et al., 2009). For instance, Hofstede (1980) initially advocated four dimensions of culture: individualism vs. collectivism, power distance, uncertainty avoidance, and masculinity vs. femininity. Later, Hofstede added a fifth dimension – long-term orientation (Hofstede, 1991) – and a sixth dimension – indulgence vs. restraint (Hofstede et al., 2010). In contrast, Trompenaars (1993) presents seven dimensions of culture (universalism vs. particularism, individualism vs. communitarianism, specific vs. diffuse, neutral vs. emotional, achievement vs. ascription, sequential time vs. synchronous time, and internal direction vs. outer direction). The GLOBE project (House et al., 2004) employs nine dimensions (performance orientation, assertiveness, future orientation, human orientation, institutional collectivism, in-group collectivism, gender egalitarianism, power distance, and uncertainty avoidance). Though there is no consensus between scholars on which dimensions comprehensively describe culture, they all maintain that culture is a multidimensional construct.

Values used to measure cultural dimensions are commonly employed to assess differences in national cultures. Numerous indices have been used to measure cultural and psychic distance – the most famous is probably the index by Kogut and Singh (1988), which bundles Hofstede's dimensions of culture into one index value (see also Shenkar, 2001). For instance, following Kogut and Singh (1988), cultural distance can be calculated as an arithmetic average of deviations along each of Hofstede's four cultural dimensions of each country from a focal country (a similar approach that builds on Euclidean distances is followed by Barkema and Vermeulen, 1997). Then, Dow and Karunaratna (2006) developed a distance measure that, in addition to cultural dimensions, incorporates characteristics of countries such as language, education, and religion. While all of these distance measures help one understand cultural distance, distance scores do not help evaluate *how* cultures differ qualitatively. In bundling cultural dimensions into one distance construct, these indices omit accounting for qualitative differences in how various dimensions may, to a larger or lesser extent, affect cultural differences. For instance, is the same value difference for two dimensions equally important in determining an overall measure of distance

across a set of dimensions? Is the impact of the difference in one dimension affected by the difference in another dimension? These indices also do not consider possible complex interrelationships between the various cultural dimensions, nor do they serve as a measure to understand differences in the impacts of the multidimensional construct of culture on intentions.

Empirical studies examining culture's impact on employee intentions, or behaviors, either employ pre-existing country-level measures, such as the culture scores provided by Hofstede, or utilize self-collected data either at the individual level or the aggregate level (Kirkman et al., 2006). A large number of studies (82 of 180 studies reviewed by Kirkman et al., 2006) use culture scores at the country level. Most studies examine culture's direct effect on employee intentions or behaviors (148 of 180 studies analyzed by Kirkman et al., 2006), whereas the moderating effect is not examined as often (32 of 180 studies analyzed by Kirkman et al., 2006) (see also Tsui et al., 2007). The focus is often on single dimensions of culture, most commonly the dimension of individualism vs. collectivism (Fischer et al., 2009). An examination of single dimensions of culture can reveal valuable insights into the differences between individuals and the effects of single cultural dimensions on intentions or behaviors (Earley, 2006). However, this approach may also *oversimplify* the cultural concept, which is a multidimensional construct. But existing studies on culture have not ignored its multidimensionality completely (Taras et al., 2009). Hofstede (1980) argues that cultural dimensions are interrelated suggesting that, across countries, there are different constellations with interrelationships between, for instance, individualism and power distance, between power distance and uncertainty avoidance, as well as between uncertainty avoidance and masculinity. Furthermore, Singelis et al. (1995) as well as Triandis and Gelfand (1998) distinguish between horizontal and vertical individualism/collectivism, which they regard as the interaction of individualism/collectivism with power distance (Robert et al., 2000). However, commonly accepted conceptualizations of culture (e.g. Hofstede, 1980; Hofstede, 2001; House et al., 2004; Trompenaars, 1993) assume that culture consists of more than two dimensions. It is therefore likely that more than two dimensions interact with each other to form specific patterns of culture.

Most studies analyzing culture's influence use a country as a proxy for culture (79%, according to Schaffer and Riordan, 2003), thus assuming that all individuals within a country represent the national culture equally and that this national culture characterizes all individuals. Several studies have shown

that there is variation in individual experiences of culture and, thus, possibly cultural heterogeneity within countries (Earley, 1993; Markus and Kitayama, 1991; Fischer and Schwartz, 2011). Steel and Taras (2010) view culture as a consequence of country *and* individual characteristics. Since factors such as education and social relationships influence the espoused cultural values practiced by individuals (e.g. Straub et al., 2002), measuring culture at the individual level is more appropriate than using proxies, such as an individual's country of residence or origin (Srite and Karahanna, 2006). Supporting the notion that individual differences in cultural values should not be dismissed, Dorfman and Howell (1988), Triandis (1995), and Fischer and Schwartz (2001) have demonstrated within-culture variations in the importance of cultural dimensions. This variance between the individuals within a country is also the focus of studies that examine the tightness or looseness of cultures (Pelto, 1968; Triandis, 1989b). Loose cultures have a higher tolerance for deviant behavior, whereas tight cultures have strong values and a rather low tolerance for deviant behavior (Gelfand et al., 2011). Tsui, Nifadkar, and Ou (2007) suggest that loose cultures might be configural, resulting in variations in individual intended and actual behaviors. Thus, although culture is commonly assumed to be a shared property of a nation, individuals within countries can vary in their cultural values. Hence, notwithstanding past research having relied on value scores to specify the characteristics of entire societies (e.g. see Triandis, 1989a), cultural values may be more appropriately measured at the individual level (e.g. see Betancourt and Lopex, 1993; Triandis, 1995; Straub et al., 2002).

USING CULTURAL ARCHETYPES TO EXAMINE CROSS-CULTURAL EFFECTS

Given the conceptual and methodical issues related to previous cross-cultural research, Tsui, Nifadkar, and Ou (2007) suggest applying a configuration approach to culture that is not bound by countries or nations. They propose that, rather than considering culture as a set of independent dimensions, one should see it as an integrated set of multiple, potentially interrelated, cultural dimensions. We specify these different sets of cultural dimensions as *cultural archetypes.* These archetypes represent certain configurations (Roth, 1992) of multiple cultural dimensions and are thus defined by the magnitude of as well as the interrelationships between cultural dimensions. This approach to examining culture provides a gestalt perspective of culture (Earley, 2006). Venkatraman (1989: 433) defines a gestalt as the "degree

of internal coherence among a set of theoretical attributes." This perspective is consistent with Meyer, Tsui, and Hinings (1993), who see configurations as "any multidimensional constellation of conceptually distinct characteristics that commonly occur together" (Meyer et al., 1993: 1175). Rather than assuming linear associations between attributes, such as cultural dimensions, attributes in a gestalt forms a holistic pattern that reflects an archetype (Miller and Friesen, 1977). Cultural archetypes may, to a greater or lesser extent, be prevalent across various countries or nations. According to the notion of cultural tightness or looseness (Gelfand et al., 2011), if national cultures exist, loose national cultures have a larger variety of cultural archetypes than tight national cultures.

Our notion of cultural archetypes is consistent with Scott's (1995) theoretical perspective in that institutions, including cultural-cognitive ones, are not necessarily aligned with national borders but can manifest in communities within as well as across nations. Similarly, Hofstede suggests that nations may be subculturally heterogeneous (Hofstede, 1980) and that "there are, in fact, a whole range of cultures in every single country" (Hofstede, 1972: 79). Studies such as those by Huo and Randall (1991) and Lenartowicz and Roth (2001) further support the existence of subcultures within countries.

The idea of drawing on archetypes is not new in the literature on societal patterns. For instance, studies on values suggest that there may be specific relationships between different values, which then form value patterns (Roe and Ester, 1999). Supporting the consideration of national cultures, Parsons and Shils (1951) assume that every society has a specific value pattern that reflects the way in which it adapts to its environment. Parsons (1967: 101) argues that the pattern variables "do not […] simply constitute a list, but have […] important systematic interrelations," thus highlighting that an analysis of single attributes, rather than the interrelated patterns, may produce distorted inferences. We suggest that this argument also holds for cultural dimensions: Analyzing single cultural dimensions without considering the potential interrelationships between them may yield misleading conclusions.

In our view, using cultural archetypes in cross-cultural research has several advantages. First, the archetype approach explicitly addresses the possible interrelationships between different cultural dimensions. Hence, cultural archetypes may not only produce a more comprehensive picture of a cultural entity, but may also account for the potential reinforcing, or the countervailing, effects of various cultural dimensions. Second, drawing on cultural archetypes is a more precise approach to studying culture

beyond the boundaries of nations. Although the country-based classification of culture has drawn criticism (e.g. McSweeney, 2002; Shenkar, 2001; Tung, 2007), the literature is still unclear on how to asses or identify a 'proper' cultural entity (Lenartowicz and Roth, 1999; Ricks et al., 1990). As cultural archetypes are not contingent on a country-based classification and because they allow within-nation variation, they may offer a more suitable way of assessing culture. Thus, instead of characterizing countries along cultural dimensions, the archetype approach allows an analysis of the individuals within and across countries. Third, a multigroup, cultural archetype-based measurement seems more appropriate for cross-cultural studies that seek to assess the impact of an independent variable on a dependent one conditional on a certain (often rather stable) context such as culture. Assessing culture's influence by incorporating the interaction effects of culture with other independent variables would represent an interaction or a *form moderation*. In contrast, multigroup analysis reveals the strengths of the relationships between independent variables and a dependent variable, contingent on different cultural archetypes (e.g. see Boyd et al., 2013; Venkatraman, 1989).

In conclusion, given the shortcomings of commonly applied approaches, we argue that using cultural archetypes is superior to measuring the effect of cultural dimensions on intentions. This argument can be summarized as follows: *The use of cultural archetypes is a superior approach to measuring culture than either using single cultural value dimensions or countries as proxies*. In support of this notion, we first examine whether cultural archetypes can be established and whether or not they are contingent on countries. Second, drawing on an illustrative example to examine culture's effect on entrepreneurial intention, we compare our advocated approach to others that are commonly applied.

AN ILLUSTRATION OF THE DEVELOPMENT OF CULTURAL ARCHETYPES

We now draw on individual-level data to assess whether cultural archetypes exist. We first present the sample and data collection procedure used for this study. Then, to identify cultural archetypes, we conduct three kinds of data analyses: We evaluate the reliability and construct validity of individual cultural dimensions through exploratory and confirmatory factor analyses. We develop cultural archetypes using a cluster analysis approach. Finally, we interpret the cultural archetypes by using descriptive statistics.

Sample and Data Collection

The empirical data for this study relate to young adults in 10 countries and were generated through surveys of business students. We collected data in China ($n = 261$), Colombia ($n = 202$), Germany ($n = 255$), India ($n = 276$), Italy ($n = 198$), Russia ($n = 224$), Spain ($n = 185$), Turkey ($n = 196$), the UK ($n = 120$), and the U.S. ($n = 270$). These 10 countries belong to eight of the 11 groups identified by Ronen and Shenkar (2013). All respondents were born in and were citizens of each surveyed country; for instance, all respondents surveyed in the U.S. were born in the U.S. and were U.S. citizens. Of the total sample ($n = 2,175$), 53% of all the respondents are female; on average, the respondents were 21 years old. In all 10 countries, we utilized the same data collection procedure and comparable timeframe (Leung, 2008). The surveys were administered anonymously in a classroom setting, and participation was voluntary. To avoid ambiguities in comprehension (e.g. Harzing et al., 2013), we translated the original English questionnaire into six languages (Chinese, German, Italian, Russian, Spanish, Turkish), using the translation and back-translation procedure (Brislin, 1980).

A Measurement Model of Cultural Dimensions

In our study, we refer to Hofstede's (2001) five cultural dimensions. These are the most fundamental dimensions of culture identified in the literature (e.g. Taras et al., 2010), and offer a suitable platform for demonstrating our approach. Our aim is to illustrate the use of cultural archetypes rather than to determine a definite and all-encompassing set of cultural archetypes that is universally applicable. We used the cultural values scale (CVSCALE) suggested by Yoo, Donthu, and Lenartowicz (2011) for measuring these dimensions. The CVSCALE employs a reflective measurement approach to each of the five dimensions and allows for measuring the cultural dimensions at the individual level. Measurement at the individual level allows one to account for variability of cultural values across individuals (Steel and Taras, 2010; Taras et al., 2009). While born, raised, and living in the same country, individuals may have different cultural value orientations. Thus, the use of country scores and the underlying assumption of homogeneity of national culture are not appropriate. (Straub et al., 2002; Srite and Karahanna, 2006; Taras et al., 2010; Taras et al., 2009).

The scale for collectivism included six items (e.g. *Group loyalty should be encouraged even if individual goals suffer*), masculinity included four items (e.g. *It is more important for men to have a professional career than it is for women*), power distance five items (e.g. *People in higher positions should make most decisions without consulting people in lower positions*), and uncertainty avoidance five items (e.g. *It is important to have instructions spelled out in detail so that I always know what I'm expected to do*). The response categories for these four scales ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale for long-term orientation included six items (e.g. *Working hard for success in the future*) and the response categories ranged from 1 (*very unimportant*) to 5 (*very important*).

In an effort to reduce the potential influence of common method variance, we took several steps in the questionnaire design, the construct measurement, and the data collection procedure. Specifically, we separated the survey items addressing the same construct and used different anchor points for independent constructs and the dependent one (Chang et al., 2010; Podsakoff et al., 2003). Furthermore, all participants were guaranteed anonymity and confidentiality relating to their responses before the questionnaire was administered, and all data was anonymized. We also applied several post hoc statistical procedures (Podsakoff et al., 2003): We performed exploratory factor analysis and conducted Harman's single-factor test, finding no single factor that accounted for the majority of the variance in the various country samples, or in the pooled sample. Second, we undertook confirmatory factor analysis (CFA) of each country sample, as well as of the pooled sample, and added a common latent factor to the initial measurement model. The common latent factor loadings were insignificant and the substantive variances were greater than their method variances in the individual country samples. Overall, these results suggest that common method variance is not a concern and that the measurement models for the country samples are adequate.

Exploratory and confirmatory factor analysis was performed to test the validity and reliability of the items used. Since the extraction communalities and factor loadings of some of the items were low, we excluded several from further analysis; the omission of some items does not affect the measurement of our constructs, since all of them are reflective in nature and the remaining items exhibit face validity (see the Appendix). Three items remained to measure collectivism, power distance, masculinity, and

uncertainty avoidance; four remained to measure long-term orientation. These items were used to produce the factor scores for our subsequent analyses.

Following Harzing et al. (2013) and Hult et al. (2008), we assessed the measurement invariance through multigroup confirmatory factor analysis (hereafter MGCFA) (Steenkamp and Baumgartner, 1998). We used the different country samples as the individual groups in the first MGCFA to test the measurement invariance across the country samples. Given the relatively large number of countries, as well as the large number of constructs included in the MGCFA, the configural invariance model showed a satisfactory fit ($\chi^2 = 2929.11$; $DF = 2020$; $p = 0.000$; $\chi^2/DF = 1.45$; $CFI = 0.905$; $RMSEA = 0.014$). The full metric invariance model showed an inadequate fit ($\chi^2 = 3302.10$; $DF = 2155$; $p = 0.000$; $\chi^2/DF = 1.53$; $CFI = 0.880$; $RMSEA = 0.016$). Compared to the configural invariance model, the differences in the comparative fit index (CFI) were above the recommended threshold ($\Delta CFI = 0.025$). We relaxed one item loading of each construct to assess the partial metric invariance. After relaxing the items, the partial metric invariance model showed an adequate fit ($\chi^2 = 3101.82$; $DF = 2092$; $p = 0.000$; $\chi^2/DF = 1.48$; $CFI = 0.900$; $RMSEA = 0.015$). Further, compared to the configural invariance model, the changes in the fit indices were below the recommended thresholds ($\Delta CFI = .005$; Cheung and Rensvold, 2002). The scalar invariance model showed an inadequate fit ($\chi^2 = 6628.91$; $DF = 2362$; $p = 0.000$; $\chi^2/DF = 2.81$; $CFI = 0.554$; $RMSEA = 0.029$) and, compared to the metric invariance model, the differences in the fit indices were above the recommended thresholds ($\Delta CFI = 0.346$). After relaxing one constraint of each construct, we were unable to establish the partial scalar invariance. However, the partial metric invariance is sufficient for our purposes. The rigorous translation process, combined with the partial metric invariance, allowed us to pool the country samples for further analyses (Mullen, 1995; Steenkamp and Baumgartner, 1998).

Identifying Cultural Archetypes

To identify the cultural archetypes, we utilized the five factor scores, which capture the various cultural dimensions, to consecutively perform two cluster analyses (using SPSS). Cluster analysis, which has been used in numerous international management and intercultural studies (e.g. Lee et al.,

2014; Green et al., 2005; Roth, 1992), allows for classifying individuals into cultural archetypes independent from both the research context and national boundaries. We employed the most common protocol of first applying a connectivity-based (hierarchical) clustering method (Ward) followed by a centroid-based cluster procedure (k-means) (as described in Sarstedt and Mooi, 2014).

Ward's method allowed us to determine the appropriate number of clusters, since we had no a priori information on the number of cultural archetypes. The agglomeration schedule (based on squared Euclidean distances) showed a strong increase between the six-cluster and five-cluster solutions and between the eight-cluster and seven-cluster solutions (see Table 1). Thus, following Ward's method, either the six-cluster or eight-cluster solution represented the most appropriate number of cultural archetypes in our study. To support the correct number of clusters, we also performed an archetypal analysis (see Cutler and Breiman, 1994, using RStudio), which unambiguously indicated six cultural archetypes.

+++ Insert Table 1 about here +++

In a second step, we applied the k-means cluster procedure to specify the best configuration of similar cultural patterns that form a cultural archetype (or cluster) of a six-cluster and an eight-cluster solution. The k-means procedure is superior to hierarchical methods, since it is less affected by outliers and can be applied to very large datasets such as ours (see Sarstedt and Mooi, 2014). Concerning the eight-cluster solution, the k-means cluster sizes point to the superiority of the six-cluster solution, since the number of cases in two clusters is below 10% of the sample size. We will therefore concentrate on six cultural archetypes in the following: The k-means cluster sizes of the six cultural archetypes are: for Archetype 1: $n = 314$, Archetype 2: $n = 482$, Archetype 3: $n = 475$, Archetype 4: $n = 363$, Archetype 5: $n = 223$, and Archetype 6: $n = 318$. An F-test of the cultural clusters confirms that the six cultural archetypes have a homogeneous structure of cultural values (F-values of all the cultural dimensions in all the archetypes are below 1, i.e. show less heterogeneity than in the total sample; only power distance has a value of 1.3 in Archetype 3). We also examined whether the cluster centroids differ significantly from each other by employing an ANOVA ex post to the k-means clustering, which produced significant F-values for each cluster mean.

Archetype Characteristics and Country Distribution

Figure 1 depicts the cultural constellations of each archetype. Table 2 displays the country distribution within these archetypes, as well as the archetype distribution within each country. Archetype 1 can be characterized as very individualistic and masculine; its members are therefore termed *masculine individualists*. In contrast, Archetype 2 resembles a constellation with a strong collectivistic and masculine orientation (*masculine collectivists*). Archetype 3 scores extremely low in terms of uncertainty avoidance, and shows a somewhat elevated power distance and individualism score. We call its members the (power distant and individualistic) *risk-takers*. Archetype 4 is very feminine and has a low power distance (*low power distant feminines*). Archetype 5 can be characterized as very short-term-oriented and scores fairly low in power distance; thus we label Archetype 5 as the (power close) *short-term-orienteds*. Finally, Archetype 6 has a particularly high power distance and shows high uncertainty avoidance, i.e. it defines a group of (uncertainty avoiding) *power distants*.

Although some archetypes are disproportionally more represented in certain countries than in others, no single cultural archetype dominates a specific country. The highest percentage of concentrations of any archetype within a country is around 40% to 45%: These concentrations are the *masculine individualists* (Archetype 1) in Russia and China, as well as the *low power distant feminines* (Archetype 4) in Spain, the UK, and the U.S. A variety of different archetypes characterize the majority of countries. For instance, Germany has high shares of *masculine collectivists* (28%), but also of *masculine individualists* (18%) and *short-term orienteds* (23%). Hence, in our study, we can reveal cultural archetypes that do not correspond to country archetypes, since the countries in question all comprise a variety of different cultural archetypes without certain archetypes truly dominating. In turn, this provides a foundation on which to compare our advocated approach of the measurement of culture with others that are commonly applied.

+++ Insert Figure 1 about here +++

+++ Insert Table 2 about here +++

AN ILLUSTRATION OF USING CULTURAL ARCHETYPES IN THE CONTEXT OF ENTREPRENEURIAL INTENTION

Building on our analyses of cultural archetypes, we draw on a simple model of entrepreneurial intention to examine culture's moderating role on the effects antecedent factors have on this intention. In doing so, we compare the predictive validity of the conventional approaches – that is, those using single cultural dimensions and nations as proxies for cultures – with the alternative, cultural archetype-based approach described above. We first describe the illustrative empirical context. Then, we describe the data and measures employed in this study before outlining our analyses and results.

An Illustrative Model of Entrepreneurial Intention

Understanding what influences entrepreneurial intentions matters, not only in the contexts of strategic and general management (Fayolle et al., 2010; Fini et al., 2012) but also in international management (Terjesen et al., 2013). Also, how factors such as an individual's tendency to take risk, and her proactiveness and innovativeness, affect entrepreneurial activities is of interest (e.g. Fayolle et al., 2010; Twomey and Harris, 2000).

A large body of research focuses on the early phase of the entrepreneurship process, namely the development of entrepreneurial intention (e.g. Shook et al., 2003). Entrepreneurial intention refers to an individual's conscious desire to set up a new business and to do so in the future (Krueger, 2009), and is the single best predictor of actual entrepreneurial behavior (Kautonen, van Gelderen and Tornikoski, 2013; Kautonen, van Gelderen and Fink, 2013; Rauch and Hulsink, 2014). However, empirical studies that examined the determinants of entrepreneurial intention yield inconclusive results (Fayolle and Liñán, 2014; Schlaegel and Koenig, 2014; Shook et al., 2003). Variations in cultural values that characterize the countries examined in previous studies may explain such inconsistencies (Carsrud and Brännback, 2011; Shook et al., 2003; Terjesen et al., 2013). Prior comparative studies have focused on the cross-country comparison of the effects of various determinants of entrepreneurial intention (e.g. Engle et al., 2010; Iakovleva et al., 2011; Moriano et al., 2012) or utilized secondary data to examine the direct and indirect influences of cultural values on entrepreneurial intention (e.g. Fernández-Serrano

and Romero, 2014; Schlaegel et al., 2013; Engle et al., 2011). However, the existing literature has neglected assessing the effects of a mix of cultural values on entrepreneurial intentions or, as Hofstede et al. (2004) describe it, of 'a blend of cultural attributes' on this intention. Drawing on cultural archetypes allows one to test the effects of such a blend of cultural values on the single best predictor of entrepreneurial activity, namely entrepreneurial intention (Kautonen, van Gelderen and Fink, 2013).

For the purpose of this illustrative study, we use a model of entrepreneurial intention that includes innovativeness, risk propensity, and proactiveness as direct antecedents. Prior studies substantiate the roles of these characteristics and suggest that their effects vary across countries (e.g. Mueller and Thomas, 2001; Zampetakis, 2008; Zhao et al., 2010). However, notwithstanding that some prior studies imply that cultural settings may moderate these effects (Iakovleva et al., 2011; Moriano et al., 2012), culture's moderating role – especially in the form of a blend of cultural dimensions – has not yet been systematically examined in this context (Terjesen et al., 2013; Fayolle and Liñán, 2014; Fayolle et al., 2014). Moreover, it echoes Thurik and Dejardin's (2011) recommendation to study the effects of 'bundles' of cultural facets in entrepreneurial contexts to better understand the explanatory ability of different lenses that have been employed in previous studies, namely those with a focus on aggregate psychological traits (Thurik and Dejardin, 2011), social legitimation (Etzioni, 1987), or an individual's dissatisfaction (Baum et al., 1993; Hofstede et al., 2004). To this end, we empirically examine whether there are cross-cultural differences in how culture moderates the antecedents' effects on entrepreneurial intentions and which measurement approach has greater predictive validity.

Our focus on examining culture's moderating role on the relationships between attitudes that capture entrepreneurial tendencies and ensuing intentions is appropriate for the purpose of this paper, for several reasons. First, the literature supports the general notion that espoused cultural values moderate the relationship between attitudes and behavioral intentions, in general (e.g. Srite and Karahanna, 2006), and particularly in the entrepreneurial context (e.g. Siu and Lo, 2013). Second, applying the logic that is commonly applied to study actual entrepreneurial behavior at the macro level supports our particular study setup at the micro, individual level: Both sociological and economic models of entrepreneurial activity assume that supply-side and demand-side considerations help explain entrepreneurship at the macro level (e.g. Thornton, 1999; Verheul et al., 2002; Verheul et al., 2002). On the supply side, the

focus is on precursors of entrepreneurial motivation or intentions as a crude measure of 'entrepreneurial supply.' Culture's role is commonly examined in the context of entrepreneurial intentions (e.g. Hayton et al., 2002). Then, according to the institutional perspective on entrepreneurship (e.g. North, 1991), an explanation of actual entrepreneurial activity requires consideration of the situational context. That is, for entrepreneurial intentions to translate into actual entrepreneurial activity, they must be matched with entrepreneurial opportunities (Leibenstein, 1968; Shane and Venkataraman, 2000), and this is conditional on the quality of general national institutions, as well as those institutions more specifically aimed at supporting entrepreneurship; including government policies and regulations, quality of research and development activity, and other formal support for new firms (e.g. Levie and Autio, 2008). Since our focus is on the supply side (i.e. on entrepreneurial intentions) and not the demand side, a wider consideration of regulatory and normative institutions may not be essential for the purpose of our study.

Data, Measures, and Methods

To illustrate the use of cultural archetypes, we draw on the same data described above. Young adults are a suitable sample, since they are receptive to entrepreneurial activity (Krueger and Carsrud, 1993), and a variety of previous studies that examine some type of entrepreneurial intention employ student samples (Kolvereid, 1996; Tkachev and Kolvereid, 1999; Krueger Jr et al., 2000; Audet, 2004). While student samples are controversial (Bello et al., 2009), such a sample is more homogenous compared to a non-student sample, allowing one to minimize potential effects of other external variables than culture, such as socio-economic factors, education, and work-related experience (Taras et al., 2009). In addition, previous research (e.g. Schlaegel and Koenig, 2014; Zapkau et al., 2015) has compared the influence of various determinants on entrepreneurial intention for student and non-student samples and found no or only very negligible differences in effect sizes. Our sample reveals entrepreneurship intentions at a time when these young adults face an important career decision (Krueger Jr et al., 2000), which makes them an appropriate sample for this study.

The scale employed to measure entrepreneurial intention includes three reflective items, anchored with phrases specific to each of the three items adapted from Krueger, Reilly, and Crasrud (2000) (e.g. *To what extent have you considered starting your own business?*). The innovativeness scale includes

five reflective items adapted from Jackson's (1994) Personality Inventory Index (e.g. *I often surprise people with my novel ideas*); the risk propensity scale has one item adapted from Segal, Borgia, and Schoenfeld (2005) (*I am always willing to take a moderate risk to get ahead*); while the proactiveness scale comprises three reflective items adapted from Northouse (2010) (e.g. *One of my skills is being good at making things work*). The response categories of the latter three scales range from 1 (*strongly disagree*) to 5 (*strongly agree*). All the scales are of a five-point Likert type. We include three control variables for which meta-analytic evidence suggests they may be related to entrepreneurial intention: age (Schlaegel and Koenig, 2014) (measured in years), gender (Haus et al., 2013) (measured as a dichotomous variable), and education (Martin et al., 2013) (measured as the number of semesters of university education).

We used the partial least squares structural equation modeling (PLS-SEM; Hair et al., 2014) approach and employed SmartPLS (Ringle et al., 2014) to empirically assess our argument by means of four analyses when incorporating different approaches to the measurement of culture as the moderating contingency (summarized in Figure 2). First, we evaluated the outlined model of entrepreneurial intention, which served as our base model. Second, we assessed the impact of the six cultural archetypes on the base model, using multigroup analyses. Third, we extended the base model by incorporating the moderating effects of the five cultural dimensions in the form of interaction moderation. Fourth, we conduct multigroup analyses using countries as the group separators. The last two steps are the two standard procedures in international management studies for measuring the moderating impact of culture.

+++ Insert Figure 2 about here +++

Base Model Results

First, we evaluated the model of entrepreneurial intention outlined above (following the procedures and recommendations in Hair et al., 2012 and Hair et al., 2014), which served as our base model. The results of the base model are outlined in Figure 3. The evaluation of the reflective measurement models does not point to problems regarding item reliability (the minimum loading was 0.522; most of the loadings meet the stricter criterion of being equal to or above 0.7). Internal consistency reliability

showed no problems either (the composite reliabilities were 0.9 for entrepreneurial intention, 0.8 for innovativeness, and 0.7 for proactiveness). Convergent reliability too showed no problems (the average variances extracted (AVE) were 0.7 for entrepreneurial intention, and 0.5 for innovativeness and proactiveness). Moreover, our measurement models exhibit discriminant validity, since the heterotrait-monotrait ratio (HTMT; Henseler et al., 2015) is below the critical value of 0.85 for all constructs' correlations. Compared to prior studies (e.g. Martin et al., 2013; Schlaegel and Koenig, 2014; Zhao et al., 2010), our inner model provides a moderate yet acceptable level of explained variance, with an R-square adjusted value of 0.13 and a predictive relevance Q^2 value of 0.09 (see Hair et al. 2014 for the inner model results evaluation). Moreover, the three estimated path coefficients between the three antecedents and entrepreneurial intention are all significant ($p < 0.01$), and their directionality is as expected (see Table 3; i.e. the PLS-SEM results for the full set of data). Compared to the control model, which only uses age, gender, and education as explanatory variables, resulting in an R-square adjusted value of 0.04 and a predictive relevance Q^2 value of 0.02, the explanatory power increases by 10 percentage points when innovativeness, proactiveness, and risk-taking are also incorporated. Hence, this model is suitable for the purpose of our study.

+++ Insert Figure 3 about here +++

A Multigroup Analysis Using Cultural Archetypes

Second, we conducted multigroup analysis using the cultural archetypes as group separators (following the procedure in Sarstedt et al., 2011; Hair et al., 2014), expecting differences in the strength of the relationships within the entrepreneurial intention model. Before doing so, we examined the measurement invariance across the six cultural archetypes. The MGCFA results showed that the configural invariance model had an acceptable fit (χ^2 = 1635.90; DF = 1086; p = 0.000; χ^2/DF = 1.506; CFI = 0.904; $RMSEA$ = 0.015). The fit of the full metric invariance model was below the recommended thresholds (χ^2 = 1809.53; DF = 1156; p = 0.000; χ^2/DF = 1.565; CFI = 0.886; $RMSEA$ = 0.016). The difference in the fit of the two models (ΔCFI = 0.018) was above the recommended threshold ($\Delta CFI < 0.01$; Cheung and Rensvold, 2002). Consequently, we relaxed the model restrictions and assessed the partial metric invariance (χ^2 = 1723.19; DF = 1126; p = 0.000; χ^2/DF = 1.530; CFI = 0.895; $RMSEA$ = 0.016). The

model fit difference between the configuration-based invariance model and the partial metric invariance model was not significant (ΔCFI = 0.009), suggesting that we could compare the results of the six archetypes. The fit of the full scalar invariance model is not acceptable (χ^2 = 5905.68; *DF* = 1266; *p* = 0.000; χ^2/DF = 4.665; *CFI* = 0.187; *RMSEA* = 0.041).

We applied various post hoc statistical procedures (Podsakoff et al., 2003) to test for common method variance (Chang et al., 2010). First, we examined the correlation coefficients to identify potential multicollinearity problems for each country, the pooled sample, and the cultural archetypes, and found no highly correlated variables. Second, we performed exploratory factor analysis and conducted Harman's single-factor test and found no single factor that accounted for the majority of variance for the various country samples, the pooled sample, and the different archetypes. Third, we added a common latent factor to the initial measurement model and performed a CFA for each country sample, the pooled sample, as well as the different archetypes. The common latent factor loadings were insignificant for all samples. Overall, these results suggest that common method variance is not a concern and that the measurement model is adequate for the various samples, allowing us to compare the results of multigroup analysis across the different archetypes.

Tables 3 and 4 outline the archetype-specific results, the absolute differences in the path coefficients, the R-square (adjusted) values and the Q² values, which are all above zero and thus indicate predictive relevance of the model (Hair et al., 2014). Our results suggest that there are differences regarding the strengths of the effects of innovativeness, proactiveness, and risk-taking across the cultural archetypes; some are more pronounced than others (i.e. the strength of the effect of innovativeness differs to a lesser extent and seems somewhat consistent). For instance, the effect of proactiveness varies significantly between Archetypes 4 and 1, 4 and 3, and 4 and 6. Hence, the strengths of these antecedents' effects appear to differ across the six groups, which implies that the cultural archetypes moderate these relationships. Also, between the cultural archetypes, there are differences in the strengths of the effects of age, gender, and education, with significant differences regarding the effects of age between Archetypes 3 and 5, and 3 and 6, and in terms of the effects of gender between Archetypes 3 and 4, and 4 and 6.

<center>+++ Insert Table 3 about here +++</center>

+++ Insert Table 4 about here +++

A Moderation Model Using Cultural Dimensions

Third, to assess how estimations based on cultural dimensions compare with those drawing on the cultural archetypes, we extend the base model by incorporating the moderating effects of the five cultural dimensions (in the form of interaction moderation) individually in respect of each cultural dimension, as well as in total involving all cultural dimensions (which is a standard procedure in intercultural research). Boyd et al. (2013) refer to interaction moderation as *form moderation*. Interaction moderation implies that path coefficients (e.g. between innovativeness and entrepreneurial intention) may vary, depending on the cultural dimension (e.g. long-term orientation). Arguments on interaction moderation mostly refer to a single dimension of culture; interrelationships between different moderation effects of cultural dimensions (i.e. higher than two way interactions) are usually not considered. Nonetheless, interaction moderation models have the advantage of providing information about how and to what extent a main relationship changes if the moderator increases or decreases (see Boyd et al., 2013).

Table 5 provides an overview of the path estimates and R-square (adjusted) values of the models with cultural dimensions as moderator variables (see Hair et al., 2014). These models also support the basic notion that culture has a moderating role, although the extent of this moderation is weak: The models support power distance's moderating form effect on risk-taking and long-term orientation's effect on innovativeness (in the individual model and in the total model). For instance, the interaction term's coefficient of 0.06 between innovativeness and long-term orientation implies that innovativeness's effect (i.e. 0.19) on entrepreneurial intention increases by 0.06 when long-term orientation increases by one standard deviation. Further, the results suggest that the other cultural dimensions are not significant moderators in the context of our model of entrepreneurial intention. However, power distance and long-term orientation do not explain the differences between our archetype-based models: This can be discerned from the significant difference in the effect of power distance between Archetypes 4 and 1, 4, and 3, and 4 and 6.

+++ Insert Table 5 about here +++

A Multigroup Analysis of Countries

Fourth, to assess how estimations based on country samples compare with those drawing on the cultural archetypes, we carried out multigroup analyses, using countries as the group separators. Table 6 outlines the country-specific results. The results show that, as a factor, a country seems to be a moderator in our entrepreneurial intention model: For instance, compare Germany's results to those of Russia. Germany's results show the lowest explanatory power and show that innovativeness is the only significant antecedent of entrepreneurial intention. Russia's results show the highest explanatory power and show that proactiveness and risk-taking are the two antecedents that affect entrepreneurial intention. Yet, these results do not necessarily only stem from cultural differences, because the differing institutional or socio-economic environments in these countries may affect them; socio-economic and cultural factors are paramount in explaining the cross-national variation in intentions in cross-national studies (e.g. Huang and Van de Vliert, 2004; Griffiths et al., 2009).

To evaluate the extent to which differences in culture between countries may cause differences in the entrepreneurial intention model between countries, we carried out a supplementary analysis: We incorporated the different countries (in the form of dummy variables) in our (total) moderator model of culture. This allows for assessing whether country membership, as well as other environmental aspects beyond culture, provide an additional explanation of entrepreneurial intention (even if incorporated as dummies) (e.g. Griffiths et al., 2009). By comparing the R-square adjusted value (0.350), which the extended moderator model produces, to the original total moderation model (0.158), indicates that there is another important aspect associated with a country's moderating effect that goes beyond culture. This can be linked to a country's institutional environment (e.g. Griffiths et al., 2009) and factors such as a country's industrial development, educational levels, political styles, religion, and so forth (which have been identified to also shape the perceived distance between countries (e.g. see Dow and Karunaratna, 2006)). We conclude that culture appears to be a strong explanatory variable, but not the only one when country is used as a group separator.

+++ Insert Table 6 about here +++

DISCUSSION

To demonstrate the development of cultural archetypes as well as their relevance and importance in cross-cultural research, we used individual-level data and referred to an illustrative empirical context, namely entrepreneurial intention. The following interpretations and conclusions should be considered against the background of the following limitations: First, we used Hofstede's (2001) conceptualization of culture, which is commonly employed, but is only one of the alternative views. Consequently, using this conceptualization may offer results that may differ from those based on a different notion (see Brewer and Venaik, 2011; Venaik and Brewer, 2010). Hofstede's conceptualization is also not without criticism (e.g. see McSweeney, 2002; Oyserman et al., 2002). Furthermore, newer studies on Hofstede's value dimensions (e.g. Hofstede et al., 2010) introduce a sixth dimension of culture – namely indulgence vs. restraint – which we did not utilize. Using this narrow set of five cultural dimensions may limit the ability to draw a holistic pattern of culture that can be generalized. However, since our aim is to illustrate the use of cultural archetypes rather than to determine a definite and all-encompassing set of cultural archetypes that is universally applicable, the development of the cultural archetypes and their use, as outlined in this paper, suffice for the illustrative nature of this study. Second, our study covers only a selected set of the potential determinants of entrepreneurial intention. While the included three personality traits (innovativeness, risk-taking, and proactiveness) represent a commonly accepted set of important predictors of intention, which is reconfirmed in the present study, cultural value dimensions and therewith cultural archetypes might moderate the influence of other antecedents that we have not included in our study. Third, while our sample covers a suitable set of countries that captures eight of the 11 cultural clusters identified by Ronen and Shenkar (2013), countries that are part of the African, Arab, and the Nordic clusters are not included, which may limit the generalizability of our findings. Fourth, a further limitation is that our study relies on a sample of business students, which may also limit the generalizability of our findings and may reduce the variance in the cultural dimensions constituting the cultural archetypes (Harzing et al., 2012; Steel and Taras, 2010). However, since most prior studies demonstrate the relevance of using student samples (Kolvereid, 1996; Tkachev and Kolvereid, 1999; Krueger Jr et al., 2000; Audet, 2004; Schlaegel and Koenig, 2014), our sample is adequate to make comparisons across cultures and to assess our results relative to those of prior studies. Fifth, cluster analyses have weaknesses in terms of identifying the correct number of clusters, which is somewhat

arbitrary based on the agglomeration schedule. Sixth, since the focus of our study is to illustrate the use of cultural archetypes opposed to the one of single cultural dimensions in cross-cultural management studies, in our illustrative context of entrepreneurial intention, we concentrated on the effects of informal, cognitive institutions, namely culture. However, although we assume that the regulatory and normative institutions may play a greater role in translating entrepreneurial intentions into actual entrepreneurial activities, they may also influence individual entrepreneurial intentions. This is despite the argument that the three institution types that make up the social structure within which individuals form entrepreneurial intentions express the same underlying cultural value emphases (Schwartz, 2014). Finally, we only refer to a single illustrative empirical context.

With these limitations in mind, we nonetheless can provide a set of valuable insights: Using cluster analyses, we identified six different cultural archetypes. These archetypes are each characterized by a different influence and relevance of different cultural dimensions. Some aspects of these constellations have been described in prior studies. For instance, concerning individualism vs. collectivism and power distance, we identify constellations with low collectivism and a fairly high power distance (Archetype 3), as well as high collectivism and an average power distance (Archetype 2), which are similar to the constellations described by Hofstede (1980) and Singelis, Triandis, and colleagues (Singelis et al., 1995; Triandis and Gelfand, 1998). However, our cultural archetypes can capture additional interrelationships between other dimensions of culture.

Furthermore, we showed that cultural archetypes do not correspond to countries. Our findings highlight that single cultural archetypes are more pronounced in specific countries, but that there are always multiple cultural archetypes within a country; this supports criticism concerning the country-specific definition of culture (e.g. McSweeney, 2002; Shenkar, 2001; Tung, 2007). At the same time, the concept of cultural archetypes offers a new way to identify a proper cultural unit: culture does not have to be defined as differences in cultural values within national boundaries, but as specific configurations of different cultural dimensions. Thus, our findings substantiate the notion that cross-national studies might be misleading to examine cross-cultural matters.

Following the identification of cultural archetypes, we have illustrated how cultural archetypes can be used to assess culture's impact on the relationships under observation. Thereby, we referred to

the context of entrepreneurship and used a model that includes innovativeness, risk propensity, and pro-activeness as direct antecedents of entrepreneurial intention. Applying multigroup analysis, our results showed differences between the six cultural archetype-based estimations concerning their explanatory power, as well as the extent and strength of the three antecedent variables' impacts. The different effects of these three antecedents across the cultural archetypes are the most notable, which implies that they are contingent on a specific cultural constellation. Thus, cultural constellations as a whole influence the independent variables' effects on a dependent variable, i.e. entrepreneurial intention in this illustrative study.

We then compared our proposed approach to the conventional one of measuring culture's impact through the moderating (interaction) effects of single cultural dimensions. We found that, relative to the base model, the inclusion of these interaction effects increases the explanatory power and support the basic notion of culture's moderating effect (as proposed by Iakovleva et al., 2011; Moriano et al., 2012), although the extent of the moderation is weak. The explanatory power of the interaction moderation estimations is somewhat comparable to that of the cultural archetype-based ones. However, the conclusions stemming from the interaction moderation effects of discrete cultural dimensions are overly simplistic. These estimations reveal less nuanced insights than those produced when examining the estimations based on cultural archetypes, which is most clear in the (significant) differences between effects of proactiveness and risk-taking on entrepreneurial intention between the different cultural archetypes. Thus, the archetype-based results appear to provide a more detailed picture of the complex effects that culture may have regarding the effects of innovativeness, risk-taking, and proactiveness on entrepreneurial intention.

Finally, we applied multigroup analyses with countries as group separators. Using countries as moderation variables is similar to the logic that underpins our idea of cultural archetypes, namely that bundles of characteristics may matter more than discrete characteristics. However, although the country subgroup analysis shows that the country moderates antecedents' effects on entrepreneurial intention, which is sufficient when one is interested in understanding cross-country differences, it is limited in ascertaining cross-cultural differences. First, as our results imply, countries may incorporate several

cultural archetypes, which can be found across countries. Second, country-based analyses hinder isolating culture's impact from other effects that may be attributed to varying formal institutional contexts. Although using country-based archetypes might be appealing to researchers, owing to the ease with which these archetypes can be implemented, and because they are not bound to a specific cultural concept, they might limit an interpretation of the results in a cross-cultural sense compared to cultural archetypes.

In sum, our results illustrated that, at least in the specific context of entrepreneurial intention, the use of cultural archetypes is superior when assessing the strengths of cultural moderating effects on cause-and-effect relationships. The use of single dimensions can specify the moderating impact that certain cultural dimensions have on the relationships under observation, but ignores effects stemming from these dimensions' interrelationships and thus provides a less detailed picture. The use of countries as a proxy of culture allows (to some extent) for accounting for such interrelationships, but is limited in respect of disentangling the effects of culture from those that might be attributed to, for instance, regulatory or normative institutions.

IMPLICATIONS

The implications of these findings for cross-cultural management studies are straightforward: If research is focused on testing culture's impact, the measurement of culture should be based on cultural archetypes, and assessing the effects of certain individual cultural dimensions should be avoided unless the research question is focused only on a discrete dimension. Thus, we suggest incorporating comprehensive measurements of culture that cover a comprehensive set of cultural dimensions, because these dimensions' pattern reflects the intricacies of culture. Moreover, given the limitations of the interaction moderation approaches, cultural archetype-based measures are not only more appropriate, but also enable easier interpretation of the strengths of culture's impact as an overarching concept.

Furthermore, our results imply that studies seeking to simply understand differences across countries – irrespective of whether they explore the nuances associated with culture, or other institutional aspects – should compare country-based groups. However, studies that focus on differences associated

with culture should employ a cultural archetype-based approach, which allows for accounting for cultural heterogeneity within countries and benefits the study of cross-cultural differences.

Besides these implications for the research on culture and its impact, our findings also have important practical implications. Against the background of increasing cultural diversity, differentiated workforce management becomes crucial. Acknowledging the concept of cultural archetypes highlights that specific configurations of multiple cultural dimensions characterize different groups of employees and that these groups differ with respect to these configurations. Accordingly, only a holistic human resource management approach that addresses the different facets of these configurations will effectively motivate these different groups. A strong focus on single cultural dimensions may be unproductive. Multinational corporations in particular must deal with cultural differences. Our findings show that different cultural archetypes are present in all the countries analyzed in this study, which implies that in each of these countries, there are specific employee subgroups that need to be motivated differently. This should be taken into account when formulating and implementing organizational and HR strategies within multinational corporations.

AVENUES FOR FURTHER RESEARCH

Several suggestions for further research may advance the line of research we have introduced. For instance, subject to the specific context within which a study is embedded and the aspects under observation, different operationalizations of the cultural dimensions (e.g. provided by Trompenaars (1993) or the GLOBE study (House et al., 2004)) may be appropriate. Our approach also applies to such operationalizations. Further research could also include a larger number of countries that cover global clusters, consensus clusters, and local clusters more comprehensively (Ronen and Shenkar, 2013) and shed further light on cultural archetypes' applicability. Furthermore, future studies could examine the predictive validity of cultural archetypes, using non-student samples and different research contexts; they could also address different contexts to provide further statistical evidence of the existence and impact of the specific cultural archetypes identified in this study. Finally, cultural archetypes could provide a new way to describe and analyze cultural distance beyond the common statistical measures. In

cultural archetypes, cultural entities' differences and similarities emerge from the specific configuration of multiple cultural dimensions; research could advance this notion.

CONCLUSIONS

Culture is a multidimensional construct. Disregarding this multidimensionality means ignoring more complex interrelationships between cultural dimensions that may matter in understanding the effect of culture irrespective of research contexts. Cultural archetypes represent a gestalt perspective of culture that incorporates multiple cultural dimensions. In this study, individual-level data from 10 countries form the basis for identifying six cultural archetypes that appear in all of these 10 countries. We emphasize that the archetypes identified are not necessarily the only set of constellations that may be applicable, since our approach is limited by focusing on the five cultural dimensions. Still, this study substantiates the usefulness of drawing on cultural archetypes when examining the effect of culture. Our empirical analyses of an illustrative model of entrepreneurial intention show that a cultural archetype-based approach to analyzing culture's moderating effects is more suitable than the standard procedures in international management research.

Hence, managers may suffer from having a focus on a single cultural dimension only, or from assuming that national differences are the most suitable way to understand differences in entrepreneurial intentions. Drawing on cultural archetypes and understanding that an individual's intentions are contingent on the differences between these archetypes will enable a better management of entrepreneurs. Managers can do so by targeting certain groups that are possibly more inclined to engage in particular behaviors such as risk-taking and proactiveness.

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APPENDIX

A1: Measures Used for Cultural Dimension

Power distance	*People in higher positions should avoid social interaction with people in lower positions.*
	People in higher positions should not ask the opinions of people in lower positions too frequently.
	People in higher positions should make most decisions without consulting people in lower positions.
Uncertainty avoidance	*Instructions for operations are important.*
	It is important to have instructions spelled out in detail so that I always know what I'm expected to do.
	Rules and regulations are important because they inform me of what is expected of me.
Collectivism	*Group loyalty should be encouraged even if individual goals suffer.*
	Group welfare is more important than individual rewards.
	Group success is more important than individual success.
Long-term orientation	*Careful management of money (thrift)*
	Personal steadiness and stability
	Long-term planning
	Working hard for success in the future
Masculinity	*There are some jobs that a man can always do better than a woman.*
	Solving difficult problems usually requires an active, forcible approach, which is typical of men.
	It is more important for men to have a professional career than it is for women.

Notes: All items measured on a 5-point scale between 1 (*strongly disagree*) and 5 (*strongly agree*).

A2: Measures Used for Innovativeness, Risk-taking, Proactiveness, Entrepreneurial Intention, and

Controls

Innovativeness	
Novel ideas	*I often surprise people with my novel ideas.* *5-point scale: 1 (strongly disagree) to 5 (strongly agree)*
Creative activities	*People often ask me for help in creative activities.* *5-point scale: 1 (strongly disagree) to 5 (strongly agree)*
Original thinking	*I prefer work that requires original thinking.* *5-point scale: 1 (strongly disagree) to 5 (strongly agree)*
Practice	*I like a job that demands skill and practice rather than inventiveness.* *5-point scale: 1 (strongly disagree) to 5 (strongly agree) [recoded]*
Creative person	*I am not a very creative person.* *5-point scale: 1 (strongly disagree) to 5 (strongly agree) [recoded]*
Risk-taking	
Risk	*I am always willing to take a moderate risk to get ahead.* *5-point scale: 1 (strongly disagree) to 5 (strongly agree)*
Proactiveness	
Big picture	*Seeing the 'big picture' comes easy for me.* *5-point scale: 1 (not true) to 5 (very true)*
Make work	*One of my skills is being good at making things work.* *5-point scale: 1 (not true) to 5 (very true)*
Strategic	*I enjoy working out strategies for my organization's growth.* *5-point scale: 1 (not true) to 5 (very true)*
Entrepreneurial intention	
Consider	*To what extent have you considered starting your own business?* *5-point scale: 1 (no consideration) to 5 (a great deal of consideration)*
Prepare	*To what extent have you prepared to start your own business?* *5-point scale: 1 (no preparation) to 5 (a great deal of preparation)*
Start	*How likely is it that you are going to start your own business within the next 5 years?* *5-point scale: 1 (extremely unlikely) to 5 (extremely likely)*
Controls	
Age	*What is your age?*
Gender	*What is your gender?*
Education	*How many semesters have you studied, including this semester?*

FIGURES AND TABLES

Table 1: Agglomeration Schedule (Ward's Method)

Cluster step	Resulting number of clusters (2,175-cluster step)	Agglomeration coefficient	Change in agglomeration coefficient
2,164	11	5,866	226
2,165	10	6,092	233
2,166	9	6,325	268
2,167	8	6,593	305
2,168	7	6,898	442
2,169	**6**	**7,340**	**489**
2,170	5	7,829	582

Note: Bold values refer to the selected number of cultural archetypes.

Table 2: Country Distribution along and within Cultural Archetypes

	Archetype												Total	
	1		2		3		4		5		6			
UK	6	*2*	8	*2*	10	*5*	44	*10*	19	*8*	13	*6*	100	*6*
U.S.	11	*7*	21	*12*	8	*8*	40	*19*	11	*10*	10	*10*	100	*12*
Germany	18	*12*	28	*16*	12	*12*	8	*4*	23	*20*	12	*11*	100	*12*
Italy	12	*6*	23	*10*	16	*12*	28	*10*	16	*11*	5	*4*	100	*9*
Spain	5	*3*	14	*6*	16	*12*	47	*16*	10	*6*	8	*6*	100	*9*
Russia	45	*26*	8	*4*	7	*6*	5	*2*	16	*12*	21	*17*	100	*10*
Turkey	12	*6*	28	*12*	16	*13*	21	*8*	10	*7*	13	*9*	100	*9*
India	8	*6*	30	*19*	11	*11*	30	*16*	10	*9*	12	*12*	100	*13*
Columbia	6	*3*	19	*9*	8	*7*	38	*14*	10	*7*	18	*14*	100	*9*
China	42	*29*	19	*11*	15	*15*	3	*2*	10	*9*	12	*11*	100	*12*
Total	18	*100*	21	*100*	12	*100*	25	*100*	13	*100*	12	*100*	100	*100*
N	382		446		255		537		286		269		2,175	

Notes: The numbers reflect the percentage. The first column presents the distribution along the cultural archetypes, and the second column presents the distribution within each cultural archetype.

Table 3: Paths, R-square (adjusted) and Q² Values of Total Sample and Cultural Archetypes in the Base

Model

	Effects on entrepreneurial intention (path coefficients)						R^2 (adjusted)	Q^2
	Innova-tiveness	Pro-ac-tiveness	Risk- tak-ing	Age	Educa-tion	Gender		
Full set of data ($n = 2175$)	0.185***	0.132***	0.120***	-0.047**	0.025	-0.156***	0.135 (0.133)	0.089
Archetype 1 ($n = 382$)	0.271***	0.108**	0.132***	0.003	0.052	-0.137***	0.192 (0.179)	0.100
Archetype 2 ($n = 446$)	0.234***	0.141***	0.100**	-0.026	-0.024	-0.147***	0.161 (0.149)	0.102
Archetype 3 ($n = 255$)	0.157**	0.039	0.125*	0.045	0.026	-0.197***	0.106 (0.084)	0.058
Archetype 4 ($n = 537$)	0.225***	0.225***	0.139***	-0.034	0.011	-0.070*	0.179 (0.170)	0.118
Archetype 5 ($n = 286$)	0.146**	0.154**	0.118**	-0.131*	0.027	-0.065	0.121 (0.102)	0.072
Archetype 6 ($n = 269$)	0.207***	0.052	0.064	-0.124*	0.067	-0.190***	0.112 (0.092)	0.058

Notes: ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$; significance was determined by applying the bootstrapping procedure (Chin, 1998;

Hair et al., 2014) with the following settings: 5,000 bootstrapping subsamples, as many observations per subsample as

in the original sample, and the no sign change option.

Table 4: Results of Archetype-specific Multigroup Analysis of the Base Model

	Effects on entrepreneurial intention (absolute difference in path coefficients)						
	Innova-tiveness	**Pro-ac-tiveness**	**Risk-tak-ing**	**Age**	**Educa-tion**	**Gender**	R^2 ($\|\Delta\|$)
|Archetype 1 to Archetype 2|	0.036	0.033	0.032	0.029	0.075	0.010	0.031
|Archetype 1 to Archetype 3|	0.114	0.069	0.007	0.042	0.026	0.060	0.087**
|Archetype 1 to Archetype 4|	0.046	0.117*	0.007	0.037	0.040	0.067	0.013
|Archetype 1 to Archetype 5|	0.124	0.046	0.013	0.134	0.025	0.072	0.071
|Archetype 1 to Archetype 6|	0.064	0.056	0.067	0.126	0.015	0.053	0.080
|Archetype 2 to Archetype 3|	0.078	0.102	0.025	0.071	0.050	0.050	0.055
|Archetype 2 to Archetype 4|	0.009	0.085	0.039	0.008	0.035	0.078	0.018
|Archetype 2 to Archetype 5|	0.088	0.014	0.019	0.104	0.051	0.083	0.040
|Archetype 2 to Archetype 6|	0.028	0.089	0.036	0.097	0.091	0.043	0.049
|Archetype 3 to Archetype 4|	0.068	0.186**	0.014	0.080	0.015	0.127*	0.074
|Archetype 3 to Archetype 5|	0.011	0.115	0.007	0.176*	0.001	0.132	0.015
|Archetype 3 to Archetype 6|	0.050	0.013	0.061	0.169*	0.041	0.007	0.006
|Archetype 4 to Archetype 5|	0.079	0.071	0.021	0.096	0.016	0.005	0.058
|Archetype 4 to Archetype 6|	0.018	0.173**	0.075	0.089	0.056	0.120*	0.067
|Archetype 5 to Archetype 6|	0.061	0.102	0.054	0.007	0.040	0.125	0.009

Notes: ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$; significance was determined by applying the bootstrapping procedure (Chin, 1998; Hair et al., 2014) with the following settings: 5,000 bootstrapping subsamples, as many observations per subsample as in the original sample, and the no sign change option.

Table 5: Results of Moderating Effects of the Five Cultural Dimensions

	Collectivism (COL)	Power distance (PD)	Masculinity (MAS)	Uncertainty avoidance (UA)	Long-term orientation (LTO)	TOTAL
Age	-0.043**	-0.051**	-0.046**	-0.046**	-0.049**	-0.049**
Education	0.025	0.023	0.026	0.025	0.027	0.024
Gender	-0.160***	-0.149***	-0.134***	-0.150***	-0.154***	-0.119***
Innovativeness	0.185***	0.187***	0.188***	0.186***	0.185***	0.191***
Proactiveness	0.133***	0.132***	0.134***	0.133***	0.126***	0.133***
Risk-taking	0.119***	0.118***	0.116***	0.119***	0.120***	0.113***
COL	-0.039*					-0.033
Inno x COL	0.019					0.016
Pro x COL	-0.003					-0.011
Risk x COL	-0.019					-0.006
PD		0.083***				0.092***
Inno x PD		-0.003				-0.004
Pro x PD		-0.044				-0.050
Risk x PD		-0.042**				-0.044**
MAS			0.079***			0.088***
Inno x MAS			-0.029			-0.038
Pro x MAS			-0.044			-0.060
Risk x MAS			0.001			0.007
UA				-0.022		-0.027
Inno x UA				0.033		0.033
Pro x UA				0.020		0.026
Risk x UA				0.016		0.018
LTO					0.037*	0.031
Inno x LTO					0.060*	0.057*
Pro x LTO					0.016	0.009
Risk x LTO					-0.011	-0.000
R^2	0.137	0.149	0.141	0.140	0.138	0.168
$R^2_{adjusted}$	0.133	0.145	0.137	0.136	0.134	0.158

Notes: *** $p < 0.01$; **$p < 0.05$; *$p < 0.10$; significance was determined by applying the bootstrapping procedure (Chin, 1998; Hair et al., 2014) with the following settings: 5,000 bootstrapping subsamples, as many observations per subsample as in the original sample, and the no sign change option. The dependent variable is entrepreneurial intention. *Inno* denotes innovativeness, *pro* denotes proactiveness, and *risk* denotes risk-taking.

Table 6: Estimated Path Coefficients, R-square (adjusted) and Q² Values of Country Samples in the

Base Model

	Effects on entrepreneurial intention (path coefficients)						R^2 (adjusted)	Q^2
	Innova-tiveness	Pro-ac-tiveness	Risk-tak-ing	Age	Educa-tion	Gender		
UK (*n* = 119)	0.189	0.120	0.079	0.021	0.008	-0.265***	0.169 (0.135)	0.034
U.S. (*n* = 259)	0.097	0.179***	0.168**	-0.119	0.057	-0.187***	0.176 (0.155)	0.101
Germany (*n* = 255)	0.157***	0.096	0.056	-0.030	0.021	-0.185***	0.093 (0.071)	0.046
Italy (*n* = 198)	0.075	0.218***	0.111*	0.150**	-0.071	-0.233***	0.200 (0.175)	0.121
Spain (*n* = 185)	0.251***	0.259***	0.081	0.105	-0.027	-0.112*	0.247 (0.222)	0.135
Russia (*n* = 224)	0.049	0.359***	0.172**	0.180	-0.043	-0.243***	0.345 (0.327)	0.211
Turkey (*n* = 196)	0.259***	0.015	0.184***	0.075	-0.130	-0.281***	0.212 (0.187)	0.104
India (*n* = 276)	0.094	0.140**	0.030	0.226***	-0.012	-0.200***	0.179 (0.161)	0.115
Colombia (*n* = 202)	0.188**	0.197	0.160**	0.006	-0.194	-0.033	0.137 (0.111)	0.045
China (*n* = 261)	0.203***	0.126*	0.101	0.100	0.136**	0.050	0.130 (0.109)	0.049

Notes: ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$; significance was determined by applying the bootstrapping procedure (Chin, 1998; Hair et al., 2014) with the following settings: 5,000 bootstrapping subsamples, as many observations per subsample as in the original sample, and the no sign change option.

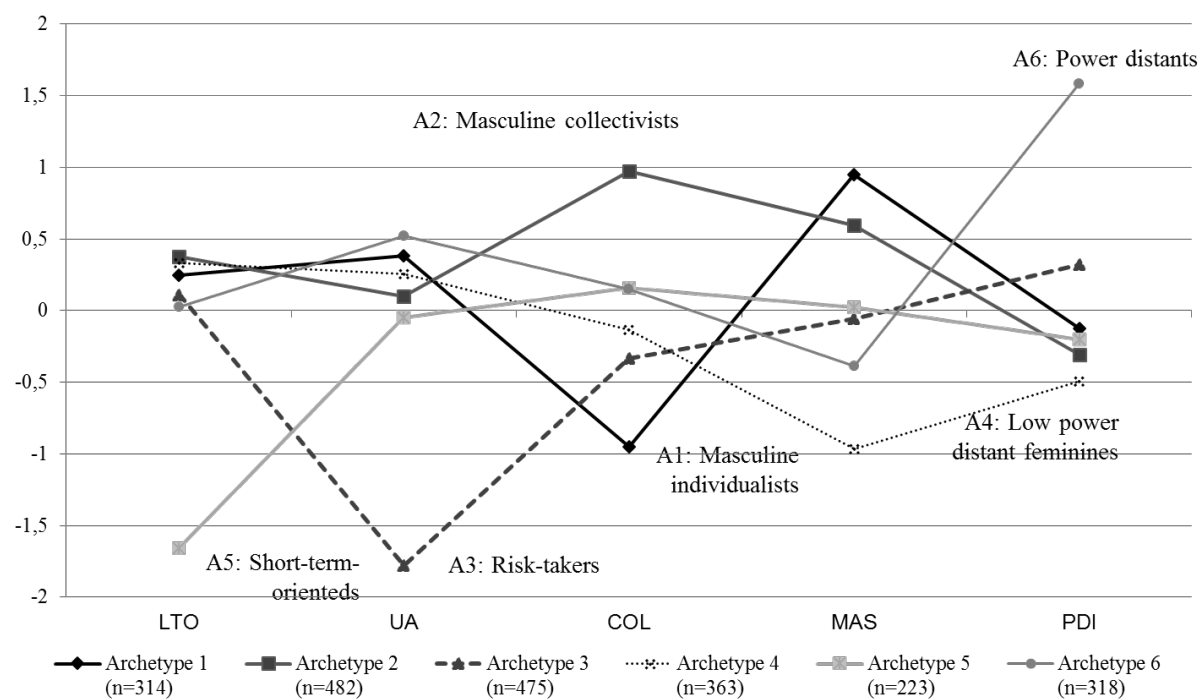Figure 1: Cultural Constellations of Different Archetypes

Figure 2: Four Steps of Analysis

Model 1: Base Model
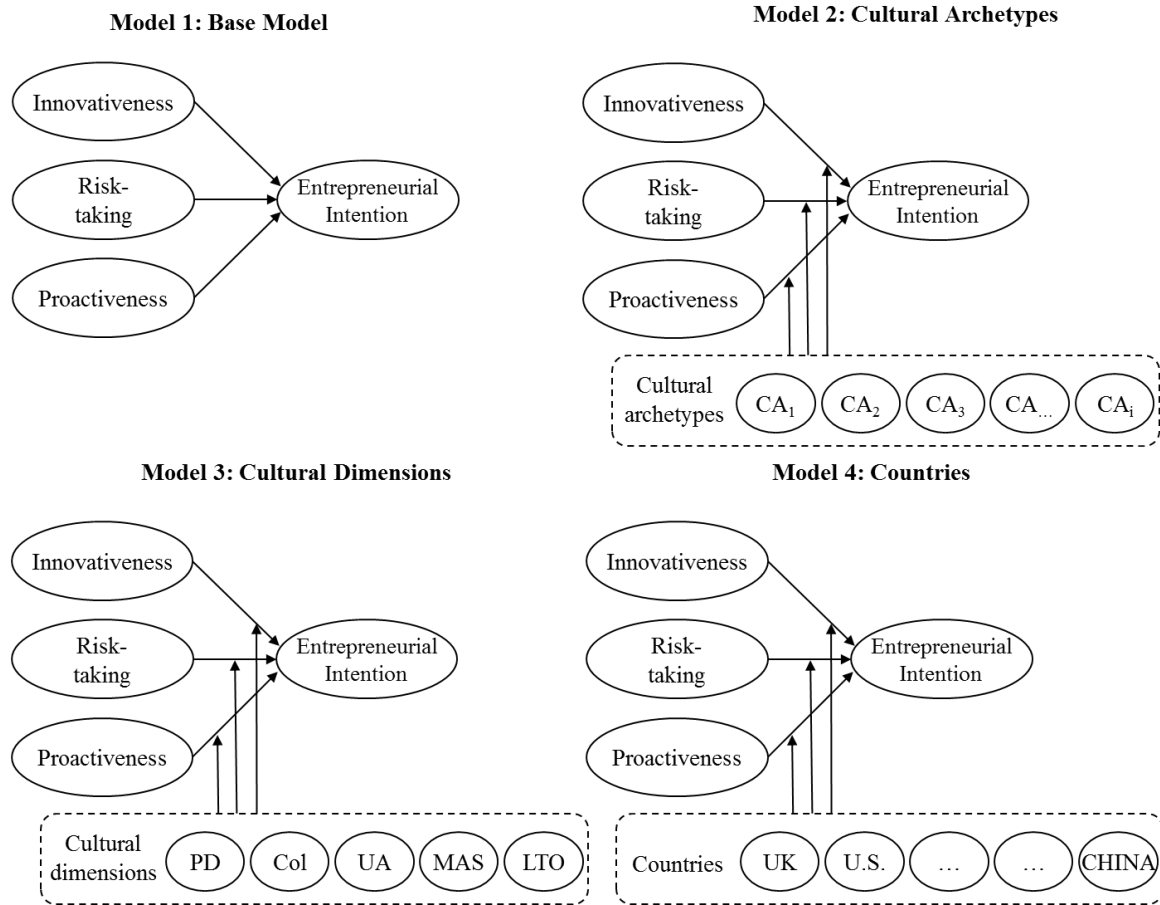

Model 2: Cultural Archetypes

Model 3: Cultural Dimensions

Model 4: Countries

Figure 3: Base Model Results