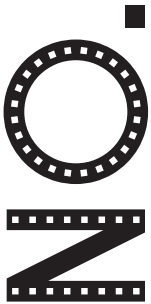


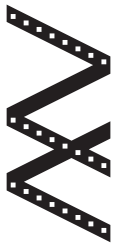
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# Working Papers in Industrial Engineering



## Culture and Entrepreneurship: The Political, Social and Individual Influences on Opportunity Entrepreneurs

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**Culture and Entrepreneurship –  
The Political, Social and Individual Influences on Opportunity Entrepreneurs**

Carsten Deckert, Rahel Schomaker, Eithne Knappitsch

**ABSTRACT**

The impact of culture on entrepreneurship is a widely accepted phenomenon. Cultural factors influence entrepreneurship via different mechanisms on the macro-, meso-, and micro-level of a country. Building on existing research, we draw a clear link between national cultural dimensions and entrepreneurship, using a new model that arranges different cultural dimensions in groups based on their particular function: political, social, or individual (PSI-model) and that distinguishes between values and practices where relevant. The PSI-model provides a coherent theoretical framework on which different cultural dimensions and their impact on entrepreneurship can be analysed, allowing for particular attention to be drawn to social practices and social values. This paper contributes to a better understanding of the relationship between culture and entrepreneurship, providing empirical evidence of how specific cultural dimensions influence entrepreneurship. The findings are of relevance from a policy perspective and can be used to generate practical recommendations for national institutions interested in promoting entrepreneurship and entrepreneurial activities. The findings are also transferable to other fields related to national cultural dimensions such as level of innovation, investment, budgeting etc.

Keywords: Entrepreneurship, Cultural Dimensions, National Culture, PSI Model

## Introduction

Discussions around a link between innovation, entrepreneurship and economic performance have characterized both management literature and economic theory for several decades (Acs 2006; Freeman 1996, 2002; Porter 1990; Verspagen 2006), the role of the entrepreneur gaining more importance following the theory of economic development by Schumpeter (2006). A substantial amount of economic growth can be attributed to technological change caused either directly by investments in research and development (R&D) or indirectly by spillover effects (Helpman 2004). Much innovation comes from entrepreneurial initiatives, so the effect of entrepreneurship for economic growth can be measured via its direct or indirect effects, as “entrepreneurs create new businesses, and new businesses in turn create jobs, intensify competition, and may even increase productivity through technological change. High measured levels of entrepreneurship will thus translate directly into high levels of economic growth” (Acs 2006, p. 97; see also Thomas & Mueller 2000; Van Praag & Versloot 2007), with entrepreneurial behaviour and entrepreneurial thinking leading to more productive, innovative, competitive, creative and flexible economies (Doğan 2016).

Thus, the potential link between entrepreneurship and economic growth, or the wealth of nations, calls for an examination of which factors affect the level of entrepreneurial activity of nations. Our main hypothesis is that national culture is one of these factors. This is in line with modern economic analyses, but also with the historical analysis of Landes (2002) who states, with regard to economic development, that “culture makes all the difference” (p. 516) as it influences the creation and dissemination of knowledge in a country. Williams & McGuire (2010) demonstrate how culture influences economic creativity, which positively influences innovation implementation, and in turn has an impact on national prosperity. Previous studies support the idea that culture influences macro-, meso- and micro-level conditions in a country,

explaining for variability in entrepreneurial activity (see e.g. Hayton, George & Zahra 2002, Uhlaner & Thurik 2007).

Considering the existing body of literature, it is plausible to assume that different dimensions of culture may have a very distinct influence on entrepreneurship via different “channels” within society and via the political system of a country (see for example Seitz 2017). Nonetheless, many previous studies fail to group these different cultural dimensions according to their influence on the macro-, meso-, or micro-level. This is where this paper departs: it both theoretically and empirically explores the impacts of culture on entrepreneurship, as expressed through different cultural dimensions that influence political institutions, societal norms, and individual behaviour. There is a clear theoretical and practical value in developing a clearer understanding of how national culture impacts entrepreneurship (Hayton, George & Zahra 2002, p. 33). Our work is a valuable contribution to this field of research. First, our recently developed PSI model goes beyond existing research approaches as it allows for a multi-layered analysis of the ways in which cultural dimensions can impact entrepreneurship, and explicitly takes differences between values and practices into consideration where necessary. This is particularly relevant with regard to the cultural dimensions of the GLOBE study, in which values and practices are distinguished for each cultural dimension. Second, our paper contributes to a better understanding of the relationship between culture and entrepreneurship by providing empirical evidence on the effect of different cultural dimensions on entrepreneurship.

In this paper, we first define and distinguish entrepreneurship. This is followed by a discussion of cultural dimensions and a review of literature on culture and entrepreneurship. We then present the PSI-model, which arranges different cultural dimensions in groups and provides a theoretical framework for examining the impact of different cultural dimensions on entrepreneurship. After presenting our results, we discuss further applications of the findings.

## **Entrepreneurship**

Entrepreneurship can be understood in two different ways: Firstly, there is “necessity entrepreneurship” which can be defined as “having to become an entrepreneur because you have no better option” (Acs 2006, p. 97). As opposed to this, “opportunity entrepreneurship” is “an active choice to start a new enterprise based on the perception that an unexploited or underexploited business opportunity exists” (Acs 2006, p. 97). In keeping with other studies on the subject, we understand entrepreneurship as “opportunity entrepreneurship” and define it in its essence as the initiation of change through innovation or creation. Entrepreneurs are considered the driving force behind innovation, job creation and economic growth (Wennekers et al. 2005). Based on this understanding, the entrepreneur bridges the gap between a business idea or an invention and its marketing or commercialization, as they are “a person with the vision to see an innovation and the ability to bring it to market” (Acs, Szerb & Lloyd 2018, p. 1). Thus, it is widely held that successful entrepreneurs “must have characteristics such as creativity and the ability to develop new and unique ideas, characteristics which are typically associated with individualistic orientations” (Radziszewska 2014, p. 35).

Kuratko (2011) describes entrepreneurship as “a dynamic process of vision, change, and creation to recognise opportunity that requires an application of energy and passion towards the creation and implementation of new ideas and creative solutions” (p. 9). This again references one common element in the many definitions of entrepreneurship, namely that change is considered positive and desirable. Other scholars describe entrepreneurship as a mindset that, for example, emphasizes opportunity more than threat (Krueger, Reilly & Carsrud 2000) and risk-taking more than risk avoidance, and as such can be determined both by the individual and cultural traits of an entrepreneur.

Entrepreneurship publications have often investigated the causes of entrepreneurship and other elements related to the economy, but according to Hofstede (2003), underestimated the role of

culture. More recent research (Estrada Cruz, Verdújover & Gómez Gras 2018; Sieger et al. 2016; Zahra 2007) suggests that the influence of culture on entrepreneurship is widely accepted, while the form and actual impact remains a matter of debate. Thus, it becomes interesting to investigate how culture influences entrepreneurship and whether or not the cultural values of specific nations might influence entrepreneurial tendency.

## **Culture and Cultural Dimensions**

Culture can be understood as a meaning-system shared, to a certain extent, by all members of the same group and used for interpretation and evaluation of events and practices (Erez & Earley 1993). Bennett (2013) adopts a constructivist approach to culture, defining it as “the coordination of meaning and action among people interacting within a boundary” (np.); whereby the scope of the group is defined by the specific boundary (national, ethnic one or other). Hofstede, Hofstede & Minkov (2010) define culture as “the collective programming of the mind that distinguishes the members of one group or category of people from others” (p. 6). This implies that meaning-systems exhibit differences in various factors – cultural dimensions – that can be used to distinguish between these cultures. A cultural dimension is thus defined as “an aspect of a culture that can be measured relative to other cultures” (Hofstede, Hofstede & Minkov 2010, p. 31). These cultural characteristics are relatively persistent over time and can be understood as a quasi-exogenous, given source (Audretsch et al. 2017).

Several models of cultural dimensions have been proposed and validated in related literature, amongst them Kluckhohn & Strodtbeck (1961), Hofstede and colleagues (Hofstede 2003, Hofstede, Hofstede & Minkov 2010), Trompenaars & Hampden-Turner (2012), the authors of the GLOBE study (Chhokar, Brodbek & House 2008; House et al. 2004, 2013) as well as McGuire, Fok & Kwong (2006). Nonetheless, only Hofstede and the GLOBE study offer a set of country data large enough for statistical analysis. Accordingly, our study scrutinizes the dimensions as proposed by the GLOBE study (Global Leadership and Organizational Behavior Effectiveness), which encompasses a set of nine cultural dimensions initially used to determine differences in leadership styles in management (House et al. 2004; Chhokar, Brodbek & House 2008; House et al. 2013; see table 1).



**Table 1: Cultural Dimensions of the GLOBE study**

<b>Cultural Dimension</b>	<b>Definition</b>
Power Distance	The degree to which members of a collective expect power to be distributed equally.
Uncertainty Avoidance	The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.
Humane Orientation	The degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring and kind to others.
Institutional / Societal Collectivism	The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.
In-Group Collectivism	The degree to which individuals express pride, loyalty, and cohesiveness in their organizations and families.
Assertiveness	The degree to which individuals are assertive, confrontational and aggressive in their relationship with others.
Gender Egalitarianism	The degree to which a collective minimizes gender inequality.
Future Orientation	The extent to which individuals engage in future-oriented behaviors such as delaying gratification, planning, and investing in the future.
Performance Orientation	The degree to which a collective encourages and rewards group members for performance improvement and excellence.

*Source: House et al. 2002, p. 6*

A new feature introduced by the GLOBE study, making it distinct from other models is the differentiation between “social practices” and “social values”, as measured by two scales: practice scale and value scale. Social practices describe how things are being done within the culture, while social values focus on the normative prescription and measure how things should be done within the culture. The importance of the distinction is indicated by the fact that the two are seldom correlated. For example, according to House et al. (2004) seven of the nine dimensions of the GLOBE study show a significantly negative correlation between the practice scale and the value scale. This result may be counterintuitive, demonstrating that people’s values can be quite contrary to their practices. A possible explanation is that the explicit distinction between values and practices in the survey triggers a reflection in the respondent and leads to frustration with the status quo and the desire for improvement, especially if the value is held in high esteem. Hence, the relation between values and practices is more complex than a simple cause-effect relationship since the two scales are interdependent (House et al. 2004).

## **Culture and Entrepreneurship**

Considering there is widespread acceptance among scholars that culture does affect entrepreneurship, we argue that the national cultural values of the entrepreneur influence entrepreneurial tendency. We purport that entrepreneurship is influenced to a significant extent by the cultural components of the entrepreneur. Personal qualities, such as educational background and management tendencies are certainly also factors in entrepreneurship, but the cultural values underpinning attitudes towards entrepreneurship (change and risk-taking or openness to change) also have a significant effect on entrepreneurship. Doğan (2016) argues that the cultural environment of a country, particularly social and cultural values, contributes to both the shaping and development of behavioral patterns and entrepreneurial identity, claiming that these are the determiners “for the development and proliferation of entrepreneurship in a country” (p. 98). Early work identified culture as responsible for moderating the relationship between contextual factors and entrepreneurial outcomes (Hayton, George & Zahra 2002), with cultural values influencing “the degree to which a society considers entrepreneurial behaviors, such as risk taking and independent thinking, to be desirable” (Hayton, George & Zahra 2002, p. 33). Morrison (2000) too claimed that culture plays a substantial role in determining both the attitudes towards entrepreneurship and motives that trigger entrepreneurship, while Lee & Peterson (2000) suggest that a national culture supporting and encouraging entrepreneurship is necessary in order for conditions or motives such as appropriate environment, financial rewards, success and target to be included in entrepreneurship.

Sarasvathy (2001) purports that all entrepreneurs begin with the means: Who they are; what they know; and whom they know. The first category suggests that entrepreneurs use fundamental aspects of their identities in the process of entrepreneurship. Identity can influence how we feel, think, behave and what behavior we value and what we aim to achieve. Estrada Cruz, Verdújover & Gómez Gras (2018) also state that identity is a relatively stable condition

that influences the initiation of the entrepreneurial process. As culture is an important part of identity, it becomes key to explaining entrepreneurs' actions and decisions and points to the likelihood of there being differences across national cultures, influenced by cultural values, beliefs and norms of behavior. Thus, we assume in this work that national cultural influences entrepreneurial identity.

Culture, due to its influence on cognitive, affective and behavioral processes can either positively or negatively influence the institutional (and economic), societal and individual conditions for entrepreneurial activity. It is inextricably linked to the ability of that society to evolve; thus shaping the personal behavioral patterns of individuals, such as entrepreneurial activity. Thomas & Mueller (2000) suggest that it is expected that entrepreneurs will reflect the dominant values of their national cultures.

Morrison (2000) describes entrepreneurial culture as a culture where there is a prevalent positive social attitude towards personal enterprise. Risk-taking and independent thinking are also commonly identified in literature as entrepreneurial behaviors, while these factors are closely linked to the individualistic and low uncertainty avoidant cultures. Doğan (2016), for example, claims that societies with a high level of individualism value independence and also value ways of dealing with uncertainty, which promotes problem solving. Pinillos & Reyes (2011) support this idea, claiming that the development of institutional settings and cognitive processes associated with entrepreneurship are common in cultures where individualism is prevalent and uncertainty avoidance low. Entrepreneurial activity is a risk-taking activity. Risk-taking is a behavior associated with an acceptance of uncertainty. In low uncertainty avoidance cultures failure is often considered as an opportunity to learn, contributing to both problem-solving and generating creative means of coping with uncertainty.

Culture reflects and reinforces political institutions and social systems, while individual values and beliefs are shaped by a culture's (often unconscious) common values. Bennett (2013)

describes political and economic institutions as products of culture (groups of people who are coordinating meaning and action among themselves) that become relatively stable in our environment. Hence, the interplay between the political or institutional culture, the societal and the individual culture of the entrepreneur become evident.

### **PSI-Model and the Impact of Culture**

One model that establishes groups of cultural dimensions with similar mechanisms of influence is the PSI-model. As the name indicates, it divides the cultural dimensions of the GLOBE study into the three categories political, social and individual dimensions. This allows for different mechanisms of cultural impact on the macro-, meso- and micro-level respectively. The model was developed and successfully tested on national innovativeness. With its help, a clear relation of innovativeness with the value scale of the political dimensions, the practice scale of the social dimensions as well as the gap between practice and value scale of the individual dimensions could be established (Deckert & Schomaker 2018). As innovativeness and opportunity entrepreneurship are related concepts, we test the PSI-model on entrepreneurship to examine if the same relations hold as with regard to innovativeness.

The *political dimensions* of the PSI-Model include Power Distance, In-Group Collectivism and Performance Orientation. These dimensions influence how the political institutions of a country are shaped, in particular the extent to which countries are pluralistic rather than exclusive. They also determine whether the political system is more centralized or decentralized, and whether positions are awarded primarily based on performance or are assigned due to factors such as kinship (Deckert & Schomaker 2018). Political dimensions play a role in shaping the culture of a nation through the political institutions, which in turn influence the economic institutions and the innovation activities of a country (see e.g. Acemoglu & Robinson 2013). Thus, the political dimensions operate through the practice scale of the involved cultural dimensions. National innovativeness has a negative relation to Power Distance and In-Group Collectivism, and a positive relation to Performance Orientation (Deckert & Schomaker 2018; Deckert, Scherer & Nyssen Guillén 2015).

According to Acemoglu & Robinson (2013) extractive institutions set no incentive for innovation, as they mainly extract income and wealth from a society to enrich a small and

powerful elite. Inclusive institutions with pluralistic involvement – characterized by low Power Distance, low In-Group Collectivism and high Performance Orientation – set much stronger incentives for innovation, as innovators can reap the benefits from successfully introducing new products or business models to markets. The same line of argument should apply to opportunity entrepreneurs, as they are by definition the ones who initiate change through innovations.

H1: High values in the practice scale for “Political Dimensions” (positive for Performance Orientation and negative for Power Distance and In-Group Collectivism) have a positive influence on entrepreneurship.

Assertiveness, Gender Egalitarianism and Humane Orientation are the *social dimensions*, which affect the relationships and interactions of individuals. These social dimensions relate to whether communication is direct and aggressive or indirect and defensive, whether a nation generally shows gender equality or imbalance and whether there is a general sense of empathy or of coldness in a culture. The social dimensions operate through the value scale of the associated GLOBE dimensions meaning the expectations of the people (Deckert & Schomaker 2018).

While Assertiveness seems to have no effect on innovativeness, Gender Egalitarianism and Humane Orientation show a positive relation to national innovativeness (Deckert & Schomaker 2018; Deckert, Scherer & Nyssen Guillén 2015). The last two should lead to informal norms fostering cooperation in a society or “social capital” as Fukuyama (1996, 2001) calls it. Fukuyama (1996) relates social capital to the radius of trust of people. A high radius of trust means that it includes not only persons of the in-group (i.e. bonding with members of e.g. family or clan), but also people from the out-group (i.e. bridging to reach people in different groups). Cooperation is not only important for innovativeness or economic activities in general, but especially so for opportunity entrepreneurship (McGrath & MacMillan 2000; Sarasvathy 2016).

H2: High positive values in the value scale for “Social Dimensions” have a positive influence on entrepreneurship

Uncertainty Avoidance, Future Orientation and Institutional Collectivism are *individual dimensions* that influence how members of a culture self-regulate; thus, their individual experiences and behavior. They also influence whether their behavior is determined by fear of novelty (neophobes) or by curiosity (neophiles), by short-term or long-term factors and whether motives are individual or collective. Previous studies have shown that these dimensions correlate negatively with innovativeness on the respective value scales, but that the opposite is true for the practice scale (e.g. Deckert, Scherer & Nyssen Guillén 2015).

Traditionally, low Uncertainty Avoidance and high Future Orientation are associated with innovativeness (Deckert & Nyssen Guillén 2017), while Institutional Collectivism can have a positive impact on innovativeness (Taylor & Wilson 2012). The PSI-model shows a more differentiated picture by detecting a tension between values and practices for the individual dimensions with regard to national innovativeness. For Uncertainty Avoidance this could be a tension between promotion and prevention focus, for Future Orientation between the ability to delay gratification and a can-do attitude and for Institutional Collectivism between independence and interdependence (Deckert & Schomaker 2019). These are tensions equally important for entrepreneurship.

The differences discussed above in values and practices lead to cognitive dissonance. Cognitive dissonance is defined as a “state of psychological tension, produced by simultaneously having two opposing cognitions” (Hogg & Vaughan 2010, p. 105) and is often considered as an “uncomfortable inconsistency among one’s actions, beliefs, attitudes, or feelings” (Gleitman, Gross & Reisberg 2010, p. 516). In an attempt to achieve cognitive consistency, people usually try to reduce the discrepancy between the two cognitions, either e.g. through appropriate actions or attitudes. In an entrepreneurial culture, we would expect that the reduction is achieved



through action lowering the gap, while in a non-entrepreneurial culture there should be a change of attitude to adapt to an existing situation leaving the gap as it is.

H3: A low level of cognitive dissonance (decreasing gap between practice and value scale) in “Individual Dimensions” has a positive influence on entrepreneurship.

## Data and Methodology

### *Independent Variables*

Our empirical approach focuses on the aggregated cultural dimensions, as delineated above, with a focus on causal links. For the construction of the indicators that constitute our independent variables, the values of the GLOBE study for the practice scales and the value scales of the cultural dimensions are used as provided by House et al. (2004, pp. 742-744).

As outlined in detail above, we assume that the practice scale and the value scale will have a different impact based on the context. Thus, for indicator construction, we selected the practice scale for the indicator Political Dimensions (in accordance with hypothesis H1), the value scale for Social Dimensions (in accordance with hypothesis H2) and the gap between practice scale and value scale for Individual Dimensions (in accordance with hypothesis H3), respectively.

For the construction of the indicator “Political Dimensions”, an approach is selected that takes stock of the specifics of the single sub-indicators used: as high levels of Performance Orientation are expected to have a positive effect on entrepreneurship, high values for Power Distance and In-Group Collectivism should lower the innovativeness of a country, we inverted the scale for the last two sub-indicators, as low Power Distance and low In-Group Collectivism influence entrepreneurship positively. We took the value for Performance Orientation and subtracted the variables Power Distance and In-Group Collectivism, before we divided the outcome by three to build the indicator. Thus, a positive sign of this indicator implies that either an increase in Performance Orientation or a reduction of Power Distance or/and In-Group Collectivism *ceteris paribus* will increase entrepreneurship. Consequently, also this indicator can be interpreted in the same way as the other ones.

For constructing the indicator “Social Dimensions”, we took the arithmetic mean of the three practice scale values of the sub-categories Assertiveness, Gender Egalitarianism, and Humane

Orientation, respectively. A positive sign of this indicator on entrepreneurship would mean that it affects entrepreneurship positively.

As for the construction of the indicator for “Individual Dimensions”, for the sub-indicators Uncertainty Avoidance, Future Orientation, and Collectivism, respectively, we took the arithmetic mean of the gap values (practice scale minus value scale). The outcome is taken as the indicator. A positive sign of this indicator on entrepreneurship would mean that it affects entrepreneurship positively.

### *Dependent Variables*

As the dependent variable we selected the Global Entrepreneurship Index: The GEI measures both the quality of entrepreneurship and the extent and depth of the supporting entrepreneurial ecosystem (GEDI 2018; Acs, Szerb & Lloyd 2018). The index includes 14 pillars described in table 2.

### *Control Variables*

While strictly speaking the values for cultural dimensions as well as for entrepreneurship stand for ranks, the number of ranks allows for the application of regression analysis. Nonetheless, some of the assumptions to use an Ordinary Least Square model are violated. Hence, we decided to run regressions that use the Generalized Linear Model with a log link. This model fits a link between a vector of explanatory variables (Political, Social and Individual Dimensions) and a vector of control variables as independent variables, and a dependent variable. The regression coefficients displayed  $(\text{Exp}(B))^1$  indicate for the probability that entrepreneurship increases once the respective independent variable increases.

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<sup>1</sup> As the “traditional” regression coefficient  $b$  cannot be interpreted properly in such non-linear models, we decided to use and interpret  $\text{Exp}(B)$ . This coefficient indicates the percentage change or the amount by which the relative risk is multiplied when the independent variable increases by one unit.

**Table 2: Pillars of the Global Entrepreneurship Index**

<b>Pillar</b>	<b>Name</b>	<b>Description</b>
<b>1</b>	Opportunity Perception	Can the population identify opportunities to start a business and does the institutional environment make it possible to act on those opportunities?
<b>2</b>	Startup Skills	Does the population have the skills necessary to start a business based on their own perceptions and the availability of tertiary education?
<b>3</b>	Risk Acceptance	Are individuals willing to take the risk of starting a business? Is the environment relatively low risk or do unstable institutions add additional risk to starting a business?
<b>4</b>	Networking	Do entrepreneurs know each other and how geographically concentrated are their networks?
<b>5</b>	Cultural Support	How does the country view entrepreneurship? Is it easy to choose entrepreneurship or does corruption make entrepreneurship difficult relative to other career paths?
<b>6</b>	Opportunity Perception	Are entrepreneurs motivated by opportunity rather than necessity and does governance make the choice to be an entrepreneur easy?
<b>7</b>	Technology Absorption	Is the technology sector large and can businesses rapidly absorb new technology?
<b>8</b>	Human Capital	Are entrepreneurs highly educated, well trained in business and able to move freely in the labor market?
<b>9</b>	Competition	Are entrepreneurs creating unique products and services and able to enter the market with them?

<b>10</b>	Product Innovation	Is the country able to develop new products and integrate new technology?
<b>11</b>	Process Innovation	Do businesses use new technology and are they able access high quality human capital in STEM fields?
<b>12</b>	High Growth	Do businesses intend to grow and have the strategic capacity to achieve this growth?
<b>13</b>	Inter- nationalization	Do entrepreneurs want to enter global markets and is the economy complex enough to produce ideas that are valuable globally?
<b>14</b>	Risk Capital	Is capital available from both individual and institutional investors?

*Source: GEDI 2018; Acs, Szerb & Lloyd 2018*

## Findings

As expected, we found a positive link between entrepreneurship and social, political and individual factors, respectively. As can be drawn from table 3, all the independent variables (IVs) show a significant and positive relationship to entrepreneurship.

According to our regression analysis, the model holds as the 3 null hypotheses cannot be rejected. Indeed, as stated in H1, high values of the indicator for “Political Dimensions” have a positive relationship with entrepreneurship, meaning that the practice scale of Performance Orientation has a positive relationship and the practice scales of Power Distance and In-Group Collectivism have a negative relationship. H2 holds, as high values in the value scale for “Social Dimensions” have a positive relationship with entrepreneurship. Also for our third hypothesis, H3, we found empirical support. A low level of cognitive dissonance in “Individual Dimensions” – which means a decreasing gap between practice scales and value scales as measured in our indicator – has a positive relationship with entrepreneurship.

As expected due to the nature of the data (“stable values from the past” for the independent variables and a current indicator for the dependent variable), and the non-linear model used, tests for Granger causality could provide evidence of the direction of influence as expected based on the theory – culture influences entrepreneurship and not vice versa. Overall, our findings are fully in line with the relevant theories.

**Table 3: Regression Results**

	Exp(B)
(Intercept)	17,749*** (,8715)
Social Factors	1,510** (,1872)
Political Factors	1,147** (,0541)
Individual Factors	1,068** (,0311)

Standard error in parentheses;  $p < .01$  \*\*\*,  $< .05$  \*\*,  $< .10$  \*

*Source: authors' calculations*

N=43

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Standard error in parentheses;  $p < .01$  \*\*\*,  $< .05$  \*\*,  $< .10$  \*

*Source: authors' calculations*

## Discussion

The political dimensions of the PSI model presumably affect entrepreneurial activity via the existing institutions, the “the rules of the game in a society” (North 1999, p. 3), which are “the humanly devised constraints that structure political, economic and social interaction” (North 1991, p. 97). In institutional economics, usually a multi-level model links the top level of culture with the lower levels of institutions, governance and ultimately market economics (Williamson 2000; Joskow 2008). Our political dimension includes Performance Orientation, Power Distance and In-Group Collectivism. According to the multi-level model, these factors can be understood as an interplay of existing political and economic institutions affecting market economics, hence the relation to the practice scale of the GLOBE model. High Performance Orientation, low Power Distance and low In-Group Collectivism lead to what Acemoglu & Robinson (2013) call “inclusive political institutions” which support inclusive economic institutions. Inclusive economic institutions set the incentives for opportunity entrepreneurship through ensuring property rights and equal opportunities, upholding contracts and allowing the market entry of new businesses with new products or business models.

In our model, the political dimension mainly affects what Acs (2006, p. 103) calls “General Framework Conditions” of entrepreneurship. These are the institutional prerequisites for entrepreneurship in a country such as a stable rule of law and functioning labor markets. However, since these conditions mainly affect large corporations and can under some circumstances even inhibit entrepreneurial start-ups, further conditions need to be present for a nation to foster entrepreneurship. These conditions are called “Entrepreneurial Framework Conditions” and defined as “a country’s capacity to encourage start-ups, combined with the skills and motivations of those who wish to go into business for themselves” by Acs (2006, p. 103).



Part of the “Entrepreneurial Framework Conditions” are cultural norms (Acs 2006). In cultural psychology, several multi-level models link cultural norms with the individual self, usually via intermediary social or group levels (Erez & Gati 2004; Markus & Kitayama 2010). In the short-term, the construction of self-concepts and self-regulation are influenced by culture, while in the long term culture is shaped by the aggregated effects of the development of individual behavior (Lehman, Chiu & Schaller 2004). In our model, the social dimension and the individual dimension include aspects of the cultural norms affecting entrepreneurship.

In the social dimension, Gender Egalitarianism and Humane Orientation shape entrepreneurial activities through the values of a culture with regard to social interaction. One characteristic of successful entrepreneurs is to use the resources of partners and networks of relationships for their enterprises (McGrath & MacMillan 2000; Sarasvathy 2016). This shows the importance of social capital in an entrepreneurial society and of related cultural norms fostering cooperation and reciprocity (Fukuyama 2001). In accordance with this rationale, our findings show that Humane Orientation and Gender Egalitarianism from our social dimension are part of the cultural norms positively affecting entrepreneurship by enabling networking and cooperation in a society – especially the formation of “weak links” bridging the gap between different strata or other tight-knit groups of society (Granovetter 1973). This is in line with the findings of Stephan & Uhlaner (2010) that a socially-supportive culture has a positive effect on national entrepreneurship.

The individual dimension consists of Uncertainty Avoidance, Future Orientation and Institutional Collectivism. These factors shape entrepreneurship through a tension between what is and what should be with regard to self-regulation of the individual members of a culture. We call the gap of perceived as-is situations (practice scale) and desired to-be situations (value scale) a form of cultural cognitive dissonance: whereby reduced cultural cognitive dissonance is related to higher entrepreneurship levels.

Entrepreneurs have to deal with situations of Knightian uncertainty where probabilities of success cannot be calculated and of goal ambiguity where preferences of the customers and even the entrepreneur herself/himself are often unclear. Strategies to cope with these situations include the focus on means instead of ends, the focus on adaptive execution and the leveraging of contingencies as well as the protection of the downside risk by taking the affordable loss into account and by pursuing only the best opportunities (McGrath & MacMillan 2000; Sarasvathy 2001,2016). Furthermore, entrepreneurs are often characterized by their passion for opportunities to create value (McGrath & MacMillan 2000) and their achievement motivation and conscientiousness (Zhao & Seibert 2006).

The tension between practices and values shows the emotional ambivalence of an entrepreneurial society. In particular, Uncertainty Avoidance shows a tension between the practice of stability by protecting the downside of a business and the value of openness for new opportunities by constantly adapting to changing circumstances. Future Orientation shows a tension between the practice of delaying gratification by a Weberian work ethic as part of achievement motivation and the value of a drive to action, as displayed by the notion to just start with one's means. Finally, Institutional Collectivism can be viewed as a tension between the practices of empathic value creation for potential customers and the values of an individualistic willingness to achieve.

In total, culture takes the same paths to affect national entrepreneurship as it takes to affect national innovativeness (Deckert & Schomaker 2018). This indicates the close relationship of the two concepts: On a national level, opportunity entrepreneurship and innovativeness seem to be the same construct viewed from different perspectives – one with a focus on individual agency, the other with an accent on institutional relations (Acs, Autio & Szerb 2014).

## Conclusion

In this paper, we propose a model with three different categories of cultural dimensions to explain the impact of culture on entrepreneurial activity. We termed the three categories political, social and individual (hence, the name PSI-model) according to their main proposed causal relations on the macro-, meso-, and micro-level. The political dimensions (Power Distance, In-Group Collectivism and Performance Orientation) are argued to influence entrepreneurship through the existing political institutions of a country and, thus, are related to the practice scale. The social dimensions (Assertiveness, Gender Egalitarianism and Humane Orientation) are argued to function through the relationships and interactions of people as being shaped by the social values of a society and therewith are related to the value scale. Finally, the individual dimensions (Uncertainty Avoidance, Future Orientation and Institutional/Societal Collectivism) are argued to work through different forms of self-regulation, but in particular through the (diminishing) gap between the practice and value scale – a phenomenon we termed cultural cognitive dissonance.

Tested empirically with a specifically constructed dataset, the PSI-model applied here provides evidence that the different dimensions, as delineated above, affect entrepreneurship in a country. In the discussion of the results, possible mechanisms from institutional economics, social psychology and individual psychology underlying these relations were identified. These proposed mechanisms might guide the potential practical use of our findings as well as future research activities.

As for practical implications, in particular the political dimensions should be placed center-stage, as, for example, the creation of inclusive institutions or the reduction of power distance in national institutions like education systems or science promotion systems. As for further research, particularly the development of measurements to test the proposed mechanisms (e.g.

in experiments or in further statistical analyses with a larger data base to ascertain the impact of the mechanisms) could be fruitful fields of application for the PSI model.

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