Culture and Life Insurance Ownership: Is It an Issue?

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Abstract: Although life insurance consumption increases from low income group to high income group, there is a substantial variation in life insurance density across-country in each income group. The level of national income can explain peoples' ability to afford insurance, while cultural traits and the sociopolitical environment not only affect the amount of perceived risk and uncertainty but also influence people's attitudes and ways of handling perceived risks. The main objective of this paper is to review the definitions of culture to include dimensionalist and non-dimensionalist measures of culture and to investigate how national culture and the sociopolitical environment influence the level of life insurance pervasiveness. The results, based on a representative sample of emerging countries, show that the sociopolitical environment is clearly more important than the limited dimensionalist definition of culture. [Key words: Insurance demand, economic growth, cultural distance, governance.] JEL Classification: G22, E44, O16

INTRODUCTION

Despite the fact that the life insurance market has become an increasingly important financial sector in the world economy, there is a large variation in life insurance consumption across countries, most notably in developing and emerging countries. In almost all studies considering insurance demand at the country level, GDP shows up as by far the most important driver of growth (Outreville, 2013). However, as explained by Millo (2016a), the relationship between insurance and income misses the

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point, as all other characteristics of the economic environment are likely to move together with income.

Without going into the details of the relationship between insurance growth and economic growth (see the recent papers by Millo, 2016a and 2016b), graphical analysis in several papers has suggested that national income is not the only determinant for cross-country variation in life insurance consumption (Chui and Kwok, 2009; Lee and Chiu, 2012; Outreville, 2013), and some authors have argued that other determinant factors are linked to the culture of the country (Park, 1993; Hofstede, 1995; Park et al., 2002; Park and Lemaire, 2011).

In nearly all theoretical and empirical work, the demand for life insurance is considered within the context of the consumer's lifetime allocation process, which maximizes a utility function depending on wealth, the income stream, interest rates, the cost of life insurance policies, and the assumed subjective discount rate for current over future consumption (Outreville, 1996; Beck and Webb, 2003; Outreville, 2013). The consumer's subjective apprehension and risk behavior is related to many factors that could be regrouped under demographic or geographic (family, location), institutional (political and legal), and social and cultural variables (education, religion, cultural distance). In other words, the level of national income can explain people's ability to afford insurance while cultural traits and the sociopolitical environment not only affect the amount of perceived risk and uncertainty but also influence people's attitudes and ways of handling perceived risks.

It is surprising that the role of culture remained for a long time limited to a few papers, considering that the article published by Hofstede (1995) in the *Geneva Papers on Risk and Insurance* opened the door to such research. Culture has been defined in many ways depending on the dominant theoretical perspective and methodological approach taken (Kirkman et al., 2006; Guiso et al., 2007; Beugelsdijk et al., 2017). Thus the first objective of this paper is to review all the studies that have examined the impact of culture on the level of insurance pervasiveness whatever definition of culture has been used.

This review shows that only a few empirical papers analyze the impact of different definitions of culture in the life insurance sector and none is applied to emerging countries. The exception is the most recent paper by Trinh et al. (2016) applying several definitions of culture and demonstrating significant differences between groups of developed and developing countries. However, the authors examine the determinants of non-life insurance only. This paper reviews the recent papers considering some of the aspects of culture in the determinants of life insurance in emerging countries. In a second part, some empirical tests are proposed, based on a

sample of emerging countries, to examine the relationship between life insurance and all possible the cultural variables.

The outline of the paper is as follows. Section 2 reviews the existing literature on the different definitions or approaches of culture. Section 3 presents some empirical tests on the cultural determinants of life insurance in emerging counties. The last section concludes the paper.

LITERATURE REVIEW

In this paper, we follow the approach used in the Finance literature and surveyed and documented in Reuter (2011). Culture is defined in two broad categories. The *dimensionalist* approaches can be traced back to Hofstede (1980, 1984, 2001) and Schwartz (1992, 1994). They are based on value-statements collected from individuals, in a large-scale survey. These value-statements are averaged by country and provide indices that characterize quantitative, and time-invariant, *cultural characteristics* for each country. Other approaches generally use the concept of "culture" in combination with a number of institutional characteristics of countries. These *non-dimensionalist* approaches assimilate culture with other concepts, such as the institutional environment (Knack and Keefer, 1995 and 1997), and the quality of the legal and regulatory environment (La Porta et al., 1997, 1998), and the quality of corporate governance (Kaufmann et al., 2000), but also the influence of religions, language, and education (Henderson and Milhouse, 1987; Hill, 2005).

The "cultural distance" approach initially proposed by Kogut and Singh (1988) is mainly used in international business studies to examine the impact of culture when looking at trade or investments flows. The hypothesis is that, as the cultural difference between two countries increases, trade or foreign direct investment decreases. Countries where entry would entail the least information costs are those most likely to be chosen as host countries. These costs could stem from geographic, cultural, institutional, and economic differences (Ghemawat, 2001; Bevan and Estrin, 2004; Bevan et al., 2004). When examining investment stocks rather than flows, distance effects are conflated with level effects (Brouthers et al., 2016; Harzing and Pudelko, 2016; Beugelsdijk et al., 2018), and cultural difference based on level effects is usually a preferred approach. However, debate still exists over how to theorize and operationalize culture, how stable culture is, which cultural factors influence organizational decisions, and whether cultural effects are dominated by other institutional factors (Aggarwal et al., 2012; Siegel et al., 2013).

Dimensionalist Approaches

The tentative measurement of national culture, with indices, can be traced back to Hofstede (1980). Hofstede's cultural dimensions are related to "power distance," which refers to the degree of inequality among people; ''individualism/collectivism,'' which measures the degree to which people in a country prefer to act as individuals rather than members of a same group; "masculinity" to evaluate the impact of gender differences in a country; and ''uncertainty avoidance/tolerance for ambiguity,'' which assesses the degree of preference for known situations. A fifth (and last) cultural dimension is introduced in a later stage by Hofstede (2001): long-term orientation. Hofstede found that there is a value, dominant in Northeastern Asia, which cannot be described by his original four dimensions. A new measure, called long-term orientation or Confucian dynamism, applicable for Asian countries only, measures the philosophy related with Confucianism: perseverance and thrift, personal stability, respect for tradition, honor of ancestors, and duty of financial support of parents.

Building on Hofstede (1980, 1984), Schwartz (1992, 1994) proposes a complementary approach oriented by three polarizations: "mastery/harmony," which values the active efforts of people to change their surroundings and get ahead of others; "egalitarianism/hierarchy," which emphasizes the commitment to help improve the welfare of other people rather than imposing the legitimacy of hierarchical roles; and "conservatism/autonomy" which compares values primarily concerned with security, conformity, and tradition to an emphasis on self-direction and own interests. A comparison of Schwartz's indices with those of Hofstede is available in Schwartz (2004), Drogendijk and Slangen (2006), and Schwartz (2006).

Douglas and Wildavsky (1982) is probably the first paper to show that the demand for insurance in a country may be affected by the unique culture of the country. Burnett and Palmer (1984) investigate a number of "behavioral biases" in life insurance holdings across nations; they note that "*traditional work ethic, fatalism, socialization preference, religion salience, and assertiveness*" are important international determinants. Park (1993) attempts to demonstrate the impact of national culture on insurance business. He uses Hofstede's cultural indices to test the effects of Uncertainty Avoidance and Individualism versus Collectivism on insurance pervasiveness of certain countries, but the validity of the results may be questioned due to the small sample size and the use of a non-parametric statistical test. These ideas are formally tested by Park, Borde, and Choi (2002), who find no statistical relationship between total insurance (life and non-life) and cultural variables with the exception of the masculine/feminine dimension.

A review of the insurance literature shows that only a limited number of studies have considered Hofstede's cultural variables and none, to our

knowledge, has ever tested Schwartz's variables. Only three studies considers the life insurance sector, none focuses on developing or emerging markets (Table 1).

Two papers by Chui and Kwok (2008, 2009) introduce cultural variables as potential predictors of life insurance consumption. Chui and Kwok (2008) investigate the impact of Hofstede's cultural variables—individualism, power distance, masculinity/feminity, and uncertainty avoidance— and find the first three dimensions to significantly impact life insurance purchases. In their follow-up study, Chui and Kwok (2009) introduce more cultural variables defined by the GLOBE (Global Leadership and Organizational Behavior Effectiveness) project. Their analysis reveals a strong relationship between life insurance consumption and scores on collectivism and power distance measures, after controlling for several economic and institutional variables, such as income, inflation, banking sector development, dependency ratio, life expectancy, and religion.

Park and Lemaire (2011) extend Chui and Kwok's work by analyzing Hofstede's fifth cultural dimension: long-term orientation. Most of the cultural variables are found to be significantly related to life insurance demand. These papers are the only papers having examined the relationship between cultural variables and life insurance expenditure.

Non-Dimensionalist Approaches

Among the non-dimensionalist approaches that assimilate culture with other concepts, it is suggested by institutional theorists that a country's institutional environment, represented by corruption perception, political risk, and the legal environment, influences traditional investment motivations (Rottig, 2016; Dikova and Brouthers, 2016). Dow and Karunaratna (2006) use the general level of education, language, political systems, and religion to measure cultural effects.

There has been a surge of interest in the consequences of governance for development and how a country's risk could have an impact on global investment strategies. A country's risk may include several factors, such as political risk, access to finance and capital markets, credit rating, or sovereign risk. Corruption is commonly defined as the abuse of public office for private gain. Governance is a much broader notion, which is defined as the traditions and institutions that determine how authority is exercised in a particular country. This includes (1) the process by which governments are selected, held accountable, monitored, and replaced; (2) the capacity of governments to manage resources efficiently and formulate, implement, and enforce sound policies and regulations; and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann, 2003).

Table 1. Summary of Papers Dealing with Dimensionalist and Other Cultural Variables

References	Sample	Years	Power distance	Uncertainty	Individualism	Masculinity	Religion	Urbanization	Education
Park et al. (2002)	Total insurance (37)	1997	NS	NS	NS	positive			
Esho et al. (2004)	Non-life (44)	1984–1998	Negative	NS				Positive	NS
Chui & Kwok (2008)	Life (41)	1976–2001	Negative	NS	Positive	Negative			
Chui & Kwok (2009)	Life (38)	1966–2004	Positive	Negative	Positive	Positive			
Park & Lemaire (2011)	Life (27)	2000–2008	Positive	Positive	Positive	Negative	Negative	NS	NS
Park & Lemaire (2012)	Non-life (82)	1999–2008	Negative	Positive	Positive	Positive	Negative	NS	NS
Trinh et al. (2016)	Non-life (67)	2000–2011	Positive	NS	NS	Negative	Negative	Positive	NS

Notes: The number of countries is in parentheses; NS = non-significant

In the insurance literature, a number of papers have investigated the empirical relationships between insurance and some of these non-dimensionalist variables. However, most of these studies refer to the insurance sector of developed countries (see Outreville, 2013, for a survey). The paper by Elango and Jones (2011) is often considered as a corner step for research on the determinants of insurance in emerging markets, although Outreville (1996) is the first study focusing on developing countries and some papers have focused on single countries (Hwang and Gao, 2003, China; Vadlamannati, 2008, India; Lee et al., 2010, Korea).[2] Table 2 presents a survey of the most recent papers focusing on developing or emerging markets. All these papers consider some aspects of non-dimensionalist measures of culture without integrating any dimensionalist measure. The only exception is Trinh et al. (2016), mentioned before. The paper shows how culture, economic freedom, and law systems together are the key drivers of non-life expenditure across countries.

The level of education and human capital endowment is generally hypothesized to be positively related to insurance consumption. Many empirical papers have verified a strong positive and significant relationship with life insurance demand (Table 2). However, some papers do not find any significant relation, questioning whether the level of education does not interfere at the earlier stage of development but does so later (Park and Lemaire, 2011). Also, the link between risk aversion, the level of education, or human capital accumulation remains largely hypothetical, as demonstrated by Outreville (2014, 2015) and by Dragos (2014) for a panel of 17 emerging economies from Asia and Europe.

Economies with a higher share of urban to total population are expected to have higher levels of life insurance consumption because urbanization simplifies the distribution of these products. This variable has generally been neglected in empirical research and results are not conclusive, with the exception of Dragos (2014) and Brokešová et al. (2014). Two earlier papers looking at life insurance demand in Asian countries use this variable as a measure of the change in social structure and find a positive relationship (Hwang and Gao, 2003; Hwang and Greenford, 2005).

The importance of good governance in the financial sector (both public and corporate) has been highlighted by crisis in Asia, Russia, and some Latin American countries. Despite the fact that this institutional environment is particularly relevant to the insurance industry, most recent studies accounting for these factors have only investigated the internationalization process of insurance business (Cole et al., 2007; Outreville, 2008) rather than

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[2]See Outreville (2013) for a survey.

Table 2. Summary of Papers Dealing with Some Non-Dimensionalist Variables

References	Sector	Sample	Years	Education	Urbanization	Political stability	Corruption	Openness	Business freedom	Rule of law	Govt. effectiveness
Eck and Nizovtsev (2006)	Life insurance	23 Latin America	2005	Positive					Negative		
Nesterova (2008)	Life insurance	14 Central European	1996–2006	NS	NS	Negative	NS			Positive	
Elango-Jones (2011)	Life and non-life	35 emerging nations	1999–2008	NS			Negative	Positive	Negative		
Kjosevski (2012)	Life insurance	14 Central European	1998–2010	Positive			NS			Positive	NS
Njegomir-Stojic (2012)	Non-life insurance	15 Central European	2004–2009	NS				Positive	Negative		
Dragos (2014)	Life and non-life	17 emerging nations	2001–2011	Positive	Positive						
Brokešová et al. (2014)	Life and non-life	4 Central European	1995–2010	Positive	Positive						Positive
Ngwenduna et al. (2015)	Life insurance	51 Africa	2009–2013	NS	NS	Positive	Negative				Positive
Alhassan-Biekpe (2016)	Life insurance	31 Africa	2006–2010								Positive

Note: NS = non-significant

the demand for insurance. Park and Lemaire (2011), Brokešová et al. (2014), and Ngwenduna et al. (2015) find a positive and significant impact of government effectiveness on life insurance. Alhassan and Biekpe (2016) define government effectiveness as institutional quality and also find a positive and significant impact. On the contrary, Kjosevski (2012) controls for corruption and government effectiveness in his analysis but results do not appear to be associated with life insurance demand. Corruption is hypothesized to affect insurance demand negatively but this result is only verified in two studies (Elango and Jones, 2011; Ngwenduna et al., 2015). Political stability (or country risks) significantly affects insurance demand in a large panel of countries (Lee et al., 2013) but the results are surprisingly inconclusive in the studies considering emerging or developing countries.

A society's attitude to business freedom is important in examining the possible success of insurance services. In developing countries where authority is weak and rules are not enforceable, the implication is a negative impact on the level of development of the insurance sector (Eck and Nizovtsev, 2006; Elango and Jones, 2011; Njegomir and Stojic, 2012). When considering a dummy variable to account for the common law system, the results are positive and significant both for developed countries (Feyen et al., 2013) and developing countries (Nesterova, 2008; Kjosevski, 2012).

An individual's religion can provide insight into the individual's behavior. Understanding religion is an important component of understanding a nation's unique culture. Countries with Islamic background have a reduced demand for life insurance consumption, as verified in all empirical papers surveyed by Outreville (2013).

The purpose of the following sections is to examine the impact of the dimensional and non-dimensional cultural variables in addition to the usually strong relationship between the level of insurance development and the level of economic activity during the same period of time. The focus is on emerging countries.

SOME EMPIRICAL TESTS ON THE DETERMINANTS OF LIFE INSURANCE IN EMERGING COUNTRIES

Data and Descriptive Statistics

Two measures are used traditionally to show the relative importance of insurance within national economies. Insurance density indicates the average annual per capita premium within a country, expressed in US dollars. It indicates how much each inhabitant of the country spends on average on insurance, but currency fluctuations affect comparisons.

Insurance penetration is the ratio of direct premiums written to GDP. It shows the relative importance of the insurance sector within national economies and is not affected by currency fluctuations. However, it ignores differences in product design, price levels, and other market structure characteristics. Density is the most common measure used in empirical studies.

Past literature on the relationship between culture and insurance relies on samples of developed and developing countries without considering the heterogeneity problem (Browne and Kim, 1993; Outreville, 1996; Beck and Webb, 2003; Li et al., 2007; Millo and Carmeci, 2015). Millo (2016a) argues that, as all other characteristics of the economic environment are likely to move together with income, the question is whether the development of the insurance market is actually due to income growth or to other correlated factors. Considering that the dimensional and non-dimensional cultural variables for the higher developed countries are measured within a short range of values, the analysis of emerging and developing countries seems more appropriate. Including developed countries in the sample would produce biased results due to the strong relationship between the level of income and the dimensional or non-dimensional measures of culture.

For emerging countries, density and penetration show an impressive increase in many countries from 2000 to 2015 (Table 3). In the early 1990s, only a few countries had a penetration ratio greater than 3. The growth has been particularly spectacular in Asian countries and territories. On the other hand, in some developing countries of South America and Africa this ratio has remained low and may reflect the economic situation experienced in these countries.

Following previous empirical research, the relationship between insurance density and GDP is hypothesized to be a log-linear relationship. Insurance density rises with GDP per capita, but different levels of GDP are assumed to be accompanied by different growth rates of penetration.

The Empirical Framework

In nearly all theoretical and empirical work, the demand for life insurance is considered within the context of the consumer's lifetime allocation process. It is assumed that there is an annual income stream $Yt, Yt + 1, \ldots, Yt + T$ where t represents the years at which the consumer's decisions are to be made and $t + T$ represents his maximum possible attained age. Annual income, which includes returns from past savings, is split between a consumption plan (C) and savings, which in turn will be devoted to future consumption or to a bequest plan (W) according to utility functions maximizing the total expected utility of the consumer:

Table 3. Density and Penetration for 15 Emerging Countries, 2000 and 2015

DENSITY	2000	2015	PENETRATION	2000	2015
Hong Kong	895.8	5665.2	Taiwan	4.83%	15.74%
Taiwan	710.0	3396.6	Hong Kong	3.53%	13.31%
Singapore	1189.0	2931.5	South Africa	14.86%	12.00%
South Korea	941.8	1939.9	South Korea	8.41%	7.30%
South Africa	439.6	687.9	Singapore	5.07%	5.55%
Chile	125.0	386.5	Thailand	1.20%	3.70%
Malaysia	101.8	315.6	Malaysia	2.51%	3.37%
Slovenia	84.4	303.2	Chile	2.72%	2.91%
United Arab Emirates	58.2	266.0	India	1.66%	2.72%
Czech Republic	57.4	240.8	Jamaica	1.80%	2.20%
Thailand	23.6	215.1	Brazil	0.70%	2.09%
Slovakia	45.6	180.9	China	0.86%	1.95%
Brazil	26.0	178.3	Slovenia	0.84%	1.43%
Hungary	61.8	162.8	Philippines	0.78%	1.37%
China	8.1	154.1	Czech Republic	1.04%	1.33%

$$EU = \sum_{i=0\ldots T} Ea(\cdot)\ g(Ct+i) + b(\cdot)\ h(Wt+i),$$

with $a(\cdot)$ and $b(\cdot)$ being the consumers' subjective discount for consumption and bequest. The expected values by assumption are due to cultural factors unique to a country.

From a macro-economic perspective, how would country-specific variables affect the level of insurance demand? As usually assumed in recent empirical studies (Chui and Kwok, 2008 and 2009; Park and Lemaire, 2011; Lee et al., 2013), at a given year t the level of insurance consumption is equal to:

Log (insurance year t) = log (GDP year t) + country-specific variables,

where country-specific variables are related to cultural, institutional, or governance factors.[3]

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[3]See Appendix 1.

Cultural differences:
- Hofstede variables:
  - Power distance, Uncertainty, Individualism, Masculinity.
- Schwartz variables:
  - Egalitarianism/Hierarchy, Harmony/Mastery, Conservatism/ Autonomy.

Cultural environment:
  - Religion, Urbanization, Human development/Education

Efficiency factors: Government effectiveness, Rule of law, Voice and account- ability.

Governance: Political stability, Corruption index.

In this paper, life insurance consumption or ownership is measured as the natural logarithm of density for country i in year t. Life insurance consumption is expected to respond positively to changes in income mea- sured by GDP per capita, and a wide strand of literature has focused on the importance of this variable to explain life insurance demand (Outre- ville, 2013).

The country-specific variables vary across countries but are assumed to be invariant across time for a given country. It is important to note that national cultural differences have remained fairly stable over time. For example, the World Value Survey, a study of 65 countries reflecting 75% of the world's population, shows a remarkable resilience of distinctive cul- tural values even after taking into account the cultural changes caused by modernization and economic development (Inglehart and Baker, 2000). Hofstede variables, to account for cultural differences, are retrieved from the Hofstede website[4] and Schwartz variables are from the Year 2005 release of the Schwartz data set (Siegel et al., 2011; Siegel et al., 2013). The Efficiency factors and Governance indices are published by the World Bank Institute and defined by Kaufmann et al. (2000), Kaufmann, 2003, and Kaufmann and Kraay (2002).

Empirical Results

The endogeneity problem between insurance, GDP, and cultural vari- ables is an important consideration that has been examined by Trinh (2016, ch. 2). However, the dimensionalist cultural variables like Hofstede and Schwartz data are static, and time-invariant measures and non-dimension- alist variables are fixed percentages or almost identical over long periods of time ($t - 1$ is identical to t for almost all countries in the sample). The

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[4]http://geert-hofstede.com/countries.html

alternative procedures proposed by Trinh (2016) are not feasible and a panel regression analysis is not useful. Including a one-year-lagged GDP is, however, an alternative solution.

There is also high multicollinearity between the different categories of cultural variables. To deal with these problems we propose a step-by-step analysis of the relationship. A similar approach is used in Chui and Kwok (2008), and Brokešová et al. (2014) divide the cultural variables into four groups (economic, demographic, sociocultural, and business environment) and estimate four partial models.

The relationship is verified only for the years 2000, 2010, and 2015. We first examine the basic relationship between life insurance and GDP (year t and $t-1$) and dimensionalist cultural variables, and in subsequent steps we introduce non-dimensionalist variables.

Table 4 shows the results for dimensionalist cultural variables. There is little difference in the results with GDP at current year t and lagged GDP at year $t-1$. Only one variable—i.e., uncertainty—exhibits a significant negative sign for all the years. Contrary to Chui and Kwok (2008), examining a sample of 41 developed and developing countries, the Power index is never significant, Masculinity exhibits the wrong expected sign and is never significant, and the Individualism variable is only significant in the first year. It is also important to show that the Schwartz variables are never significant in all the models tested. These overall results are similar to Park et al. (2002), who failed to identify any significant cultural factor. GDP per capita (as a measure of the affordability of insurance) remains the major factor that explains the level of insurance ownership.

As a robustness test, the validation of the empirical tests is done with life insurance penetration instead of life insurance density. The result is even stronger since none of the cultural variables remain consistently significant over the three periods (Appendix 2).

In a second step we add the cultural environment to the list of significant variables such as uncertainty and individualism. Results are presented in Table 5. Contrary to Hwang and Gao (2003) and Hwang and Greenford (2005), the variable measuring the share of the urban population (URBAN) is never significant. Contrary to many empirical papers presenting a strong positive and significant relationship between life insurance demand and human development and education (HDI) (see Outreville, 2013), our results are not significant. Some papers did not find any significant relation, calling into question the fact that the level of education may not interfere at the earlier stage of development but does so later (Park and Lemaire, 2011). The only significant variable in all the periods is Religion (RELIGION). We tested the Christian, Muslim, and Buddhist religions and

Table 4. The Impact of Dimensionalist Cultural Variables

Dependent Variable: LOG(Density 2000)

Variable	Current year t			Lagged year (t–1)		
	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	9.724	7.907	1.229***	13.117	9.944	1.319
LOG(GDPCAPITA)	1.568	0.230	6.808	1.465	0.316	4.626***
POWER	−0.001	0.015	−0.076	−0.012	0.019	−0.658
UNCERTAINTY	−0.021	0.011	−1.808*	−0.032	0.014	−2.256**
INDIVIDUALISM	0.032	0.015	2.167**	0.028	0.017	1.683*
MASCULINITY	−0.014	0.015	−0.946	−0.010	0.019	−0.535
EGALITARISM	−0.698	1.017	−0.686	−0.671	1.291	−0.519
HARMONY	−1.039	0.904	−1.149	−1.061	1.145	−0.926
CONSERVATISM	0.103	1.294	0.079	−0.527	1.634	−0.322
R-squared	0.798			0.677		

Dependent Variable: LOG(Density 2010)

Variable	Current year t			Lagged year (t–1)		
	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	15.872	10.443	1.519	16.759	10.935	1.532
LOG(GDPCAPITA)	1.368	0.346	3.950***	1.315	0.370	3.551***
POWER	−0.021	0.019	−1.117	−0.018	0.019	−0.048
UNCERTAINTY	−0.033	0.014	−2.361**	−0.035	0.014	−2.405**
INDIVIDUALISM	−0.001	0.018	−0.057	0.003	0.019	0.161
MASCULINITY	0.008	0.019	0.445	0.004	0.019	0.229
EGALITARISM	−1.230	1.272	−0.967	−1.261	1.329	−0.949
HARMONY	−0.335	1.138	−0.294	−0.352	1.189	−0.295
CONSERVATISM	−1.031	1.674	−0.616	−1.175	1.758	−0.668
R-squared	0.654			0.623		

Dependent Variable: LOG(Density 2015)

Variable	Current year t			Lagged year (t–1)		
	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	10.399	9.822	1.058	14.597	10.785	1.353
LOG(GDPCAPITA)	1.536	0.339	4.528***	1.307	0.370	3.532***
POWER	−0.019	0.017	−1.121	−0.024	0.019	−1.234
UNCERTAINTY	−0.029	0.013	−2.254**	−0.036	0.014	−2.556**
INDIVIDUALISM	0.006	0.016	0.393	0.002	0.018	0.141
MASCULINITY	−0.003	0.017	−0.214	−0.006	0.019	−0.288
EGALITARISM	−0.897	1.155	−0.777	−1.136	1.287	−0.882
HARMONY	−0.471	1.029	−0.457	−0.316	1.152	−0.274
CONSERVATISM	0.058	1.569	0.037	−0.534	1.740	−0.307
R-squared	0.698			0.623		

Note: All models have been estimated with a constant variable C.
Significance level at 1% (***), 5% (**), and 10% (*).

Table 5. The Impact of the Cultural Environment

Dependent Variable: LOG(Density 2000)

Variable	Current year t			Lagged year (t–1)		
	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	2.904	2.161	1.344	–0.355	2.524	–0.141
LOG(GDPCAPITA)	1.216	0.412	2.950**	1.997	1.294	1.306
UNCERTAINTY	–0.022	0.008	–2.569***	–0.028	0.009	–3.144***
INDIVIDUALISM	0.019	0.011	1.677*	0.021	0.013	1.542*
URBAN	0.102	2.136	0.047	0.433	0.520	0.833
HDI	–0.228	3.538	–0.064	3.125	4.324	0.722
RELIGION (Muslim)	–0.912	0.585	–1.558*	–0.901	0.666	–1.352
R-squared	0.702			0.629		

Dependent Variable: LOG(Density 2010)

Variable	Current year t			Lagged year (t–1)		
	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	3.250	2.247	1.446	2.997	2.368	1.265
LOG(GDPCAPITA)	0.965	0.543	1.778*	0.945	0.624	1.513*
UNCERTAIN	–0.029	0.008	–3.497***	–0.030	0.008	–3.504***
INDIVIDU	0.012	0.012	0.944	0.012	0.012	0.992
URBAN	0.363	2.025	0.179	0.279	2.192	0.127
HDI	0.996	4.350	0.229	1.538	4.510	0.341
RELIGION (Muslim)	–1.276	0.621	–2.054**	–1.227	0.627	–1.955**
R-squared	0.642			0.633		

Dependent Variable: LOG(Density 2015)

Variable	Current year t			Lagged year (t–1)		
	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	3.842	2.936	1.308	0.924	3.173	0.291
LOG(GDPCAPITA)	1.508	0.695	2.169***	1.626	0.935	1.851*
UNCERTAIN	–0.020	0.009	–2.320**	–0.024	0.009	–2.681**
INDIVIDU	0.005	0.012	0.471	0.003	0.013	0.268
URBAN	–0.253	1.929	–0.131	0.457	2.321	0.197
HDI	–1.512	5.778	–0.262	4.927	5.665	0.869
RELIGION (Muslim)	–0.909	0.625	–1.454*	–0.732	0.663	–1.103
R-squared	0.603			0.554		

Note: All models have been estimated with a constant variable C.
Significance level at 1% (***), 5% (**), and 10% (*)

found a strong negative and significant impact related to the Muslim religion, as demonstrated in previous studies (See Outreville, 2013).

In the last step we add to the model the non-dimensionalist cultural variables related to efficiency and governance. Among the efficiency factors

defined by Kaufmann et al. (2000), Voice and Accountability and Rule of law are never significant whatever the model or period tested. On the other hand, Government Effectiveness (GOVT Effectiveness) has a positive and significant impact on all models and periods tested. Concerning the governance variables, only the political stability index (POLITICS) is negative and significant in the year 2000. The corruption index has a negative impact on the results but is never significant.

Table 6 below shows the best results for the years 2000, 2010, and 2015. It is interesting to note that only two variables remain significant in all the periods—i.e., Religion and Government effectiveness. None of the dimensionalist cultural variables, including uncertainty, remain significant when Government effectiveness is introduced in the model. This result makes sense because government effectiveness is certainly the result of the culture and cultural environment of a country. Cultural effects are dominated by institutional factors (Aggarwal et al., 2012; Siegel et al., 2013). This result is also similar to the conclusion of Park et al. (2002), who failed to identify any cultural factor and concluded that economic freedom and regulatory factors explained the degree of insurance pervasiveness. Park and Lemaire (2011) also find a positive and significant impact of government effectiveness on insurance density.

CONCLUSION AND DISCUSSIONS

Although the level of national income can explain people's ability to afford insurance, it is hypothesized that cultural traits and the sociopolitical environment not only affect the amount of perceived risk and uncertainty but also influence people's attitudes and ways of handling perceived risks. Thus, the main objective of this paper is to investigate how national culture and sociopolitical environment influences the level of life insurance consumption or ownership in a representative sample of emerging countries.

The first part of the paper reviews the different definitions of culture and shows that these approaches have not been systematically investigated, with the exception of Trinh (2016) for the non-life insurance sector. Papers considering the dimensionalist cultural variables in the life insurance sector do not take into account the non-dimensionalist approaches, and vice-versa.

The second part of the paper presents some results based on a representative sample of emerging countries. It shows that the sociopolitical environment measured by Government effectiveness is clearly more important than the limited dimensionalist definition of culture. This result is in line with Siegel et al. (2013), who show that cultural effects are

Table 6. The Impact of the Non-Dimensionalist Cultural Variables

Dependent Variable: LOG(Density 2000)

Variable	Current year *t*			Lagged year (*t*–1)		
	Coefficient	Std. Error	*t*-Statistic	Coefficient	Std. Error	*t*-Statistic
C	2.458	0.481	5.107	2.165	0.527	4.108
LOG(GDPCAPITA)	0.751	0.187	4.005***	0.627	0.194	3.224***
UNCERTAINTY	–0.006	0.006	–1.053	–0.007	0.007	–0.984
RELIGION (Muslim)	–0.774	0.395	–1.957**	–0.824	0.421	–1.959**
GOVT Effectiveness	2.031	0.366	5.548***	2.278	0.369	6.168***
POLITICS	–0.628	0.267	–2.351**	–0.604	0.286	–2.111**
R-squared	0.831			0.809		

Dependent Variable: LOG(Density 2010)

Variable	Current year *t*			Lagged year (*t*–1)		
	Coefficient	Std. Error	*t*-Statistic	Coefficient	Std. Error	*t*-Statistic
C	3.898	0.554	7.033	3.862	0.552	6.991
LOG(GDPCAPITA)	0.298	0.218	1.368	0.324	0.215	1.508
UNCERTAINTY	–0.009	0.006	–1.371	–0.009	0.006	–1.416
RELIGION (Muslim)	–0.951	0.393	–2.419**	–0.939	0.389	–2.412**
GOVT Effectiveness	1.937	0.342	5.657***	1.936	0.334	5.790***
POLITICS	–0.176	0.242	–0.731	–0.179	0.238	–0.751
R-squared	0.824			0.826		

Dependent Variable: LOG(Density 2015)

Variable	Current year *t*			Lagged year (*t*–1)		
	Coefficient	Std. Error	*t*-Statistic	Coefficient	Std. Error	*t*-Statistic
C	3.509	0.648	5.425	3.725	0.596	6.239
LOG(GDPCAPITA)	0.238	0.280	0.852	0.100	0.241	0.416
UNCERTAINTY	–0.001	0.006	–0.168	–0.0001	0.006	–0.024
RELIGION (Muslim)	–0.682	0.396	–1.721*	–0.675	0.400	–1.686*
GOVT Effectiveness	2.168	0.367	5.907***	2.265	0.358	6.321***
POLITICS	–0.299	0.249	–1.203	–0.250	0.244	–1.024
R-squared	0.808			0.805		

Note: All models have been estimated with a constant variable C.
Significance level at 1% (***), 5% (**) and 10% (*)

dominated by other institutional factors. Among the variables related to the cultural environment, religion is also an important significant factor, as demonstrated in the past empirical research.

There are two major limitations to this study that could be examined in future work. The first is related to the empirical analysis used to deal with endogeneity and multicollinearity problems. The recent work by

Trinh (2016) for non-life insurance certainly could be considered for the life insurance sector. The second is related to systemic differences between countries due to the importance of social security systems outsourcing old-age welfare to the private sector, which gives rise to the world's biggest life insurance markets in terms of penetration over GDP in some Asian countries or territories. However, recent studies by Feyen et al. (2013), Brokešová et al. (2014), and Ngwenduna et al. (2015) show non-significant results for the impact of Social security variables.

Although social security systems are not considered as a cultural element, further analysis should take into account the different social security systems with the constraints related to endogeneity problems between the demand for social insurance and culture demonstrated in Brügger et al. (2011).

Even though these limitations may weaken the significance of the findings, the empirical results are still reasonable and represent a useful estimation of influential cultural factors for life insurance. Further research on the determinants of insurance demand should consider the importance of institutional factors and how they may interfere in the role of cultural factors.

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APPENDIX 1: DEFINITIONS

The following citations are obtained from Hofstede (2001):

"**Power-distance** is the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally. The basic problem involved is the degree of human inequality that underlies the functioning of each particular society."

"**Uncertainty avoidance** is the extent to which a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, and different from usual. The basic problem involved is the degree to which a society tries to control the uncontrollable."

"**Individualism** on the one side *versus* its opposite **collectivism** is the degree to which individuals are supposed to look after themselves or remain integrated into groups, usually around the family. Positioning itself between these poles is a very basic problem all societies face."

"**Masculinity** *versus* its opposite **femininity** refers to the distribution of emotional roles between the genders, which is another fundamental problem for any society to which a range of solutions are found; it opposes 'tough' masculine to 'tender' feminine societies."

The following short definitions are obtained from Chui, Lloyd, and Kwok (2002):

Conservatism includes values that are important in close-knit harmonious relationships, in which the interests of the individual are not viewed as distinct from those of the group. These values are primarily concerned with security, conformity, and tradition.

Mastery accentuates active mastery of the social environment through self-assertion. Such values promote the active efforts of people to change their surroundings and get ahead of others.

Harmony lays emphasis on harmony with nature.

Egalitarian Commitment emphasizes the transcendence of selfish interests. This group of values concerns voluntary commitment to help improve the welfare of other people.

Hierarchy stresses the legitimacy of hierarchical roles and resource allocation.

The following short definitions are obtained from Kaufmann et al., (2000):

Government Effectiveness reflects the quality of the government as well as its capability to formulate and implement policies and deliver public goods.

Rule of Law reflects citizens' assurance and faith in the law and societal rules. But also the quality of the legal system and the enforceability of contracts.

Voice and Accountability reveals countries' behavior in a democratic matter. For example, to what extent citizens can participate in selecting their own government, as well as freedom of expression, freedom of association, and free media.

Political Stability captures the stability of a country's political environment. Measures the different political views within a country and the extent to which terrorist groups or other groups with radical political views can affect the stability of a country.

Corruption reveals the degree to which public power is exploited for private gains.

Appendix 2. The Impact of Cultural Variables on Life Insurance Penetration

Dependent Variable: Penetration 2000			
Variable	Coefficient	Std. Error	t-Statistic
C	0.3857	0.2044	1.887
LOG(GDPCAPITA2000)	0.0085	0.0060	1.429
POWER	–0.0003	0.0004	–0.684
UNCERTAIN	–0.0003	0.0003	–1.019
INDIVIDU	0.0004	0.0004	1.165
MASCULIN	–0.0001	0.0004	–0.279
EGALITARISM	–0.0213	0.0263	–0.811
HARMONY	–0.0421	0.0234	–1.799*
EMBEDDED	–0.0211	0.0335	–0.631
R-squared	0.4468		

Dependent Variable: Penetration 2010			
Variable	Coefficient	Std. Error	t-Statistic
C	0.5186	0.2600	1.994
LOG(GDPCAPITA2000)	0.0130	0.0080	1.509
POWER	–0.0007	0.0004	–1.545
UNCERTAIN	–0.0006	0.0003	–1.670*
INDIVIDU	–0.0002	0.0004	–0.411
MASCULIN	–0.0001	0.0004	0.186
EGALITARISM	–0.0546	0.0283	–1.724*
HARMONY	–0.0188	0.0282	–0.666
EMBEDDED	–0.0265	0.0416	0.637
R-squared	0.4590		

Dependent Variable: Penetration 2015			
Variable	Coefficient	Std. Error	t-Statistic
C	0.4740	0.2838	1.669
LOG(GDPCAPITA2000)	0.0177	0.0098	1.814*
POWER	–0.0007	0.0004	–1.442
UNCERTAIN	–0.0005	0.0003	–1.534
INDIVIDU	–0.0002	0.0004	–0.450
MASCULIN	0.0001	0.0005	0.103
EGALITARISM	–0.0473	0.0333	–1.417
HARMONY	–0.0259	0.0297	–0.870
EMBEDDED	–0.0187	0.0453	–0.412
R-squared	0.4870		