

# Influencers of life insurance investments – an empirical evidence from Europe

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## Keywords

European Union, Economic Growth, Investment Decisions, Insurance

## Abstract

*This study analyzes the impact of economic, demographic and cultural factors on the life insurance consumption in 28 European countries. The period of study assumed is post financial crisis from 2009-2014 and the study considers many of the emerging Eastern European economies where there have been significant insurance sectors reforms recently. Europe is the largest insurance market with 35% of the overall insurance premium contribution but ranked third in insurance per capita in 2014, hence Europe is an interesting region to study the insurance demand. The study observed four economic parameters GDP per capita, gross savings, competitiveness of nations and inflation to impact significantly the insurance consumption in the region. Two demographic factors population and education and two cultural factors individualism and long term orientation impact the insurance consumption in the European region.*

## Introduction

Insurance is the nerve center of the financial services industry globally. The industry over the last decade due to globalization, deregulation and digitization has gone through a tremendous transformation. In the simplest terms insurance of any type (life and non-life) is all about managing risk. In case of life insurance, the insurer collects premiums from policy holders, invests the money in lower risk investments and then reimburses the money when the policy holder passes away or during maturity.

Macroeconomic forces have a strong impact on the global insurance industry. According to report "World insurance in 2014: back to life" published by Swiss Re in 2014 the global real GDP rose by 2.7%, near to the 10-year annual growth rate average of 2.8% which led to an improvement in the economic environment for insurers. Global non-life premiums increased by 2.9% in 2014 to USD 2,124 billion, slightly higher than the 2.7% growth rate of 2013. For the life insurance sector there was a return to positive growth in 2014 with premiums up by 4.3% to USD 2,655 billion after a 1.8% decline in 2013. From a regional perspective the major growth drivers were Oceania, Western Europe and Japan which more than offset the contraction in the North American market. The emerging markets have been the growth engine for the life insurance premiums which improved to 6.9% from 3.6% in 2013 driven primarily by China. In other emerging regions such as Central and Eastern Europe (CEE) the premium growth generally slowed or even continued to decline. Benchmarking with the pre-crisis years the annual premium growth has been slower in the emerging markets.

If we compare the GDP per capita of Austria and United Kingdom both are similar but the life insurance expenditure per capita of United Kingdom is more than three times that of Austria. This has led researchers to believe that there are factors more than the macroeconomic forces which determines the insurance spend in countries. Researchers worldwide have studied:

The macroeconomic factors determining the investments in the insurance industry.

Beyond the macroeconomic factors the role of national culture and demographics in determining the level of investments in the insurance industry.

The current research paper based on the data collected for 28 European countries analyses the prevailing factors in the development of the life insurance industry in Europe. This article contributes literature in the main aspects as follows:

No current literature exists which examines both the cultural and non-cultural factors impacting the life insurance spend for Europe.

Three dependent variables including premium volume, insurance density (insurance expenditure per capita), and insurance penetration are adopted in our analysis which for the first time is being studied together to analyze insurance demand in Europe.

A cross sectional time lag country analysis for the insurance demand for both the western European and Central and Eastern European countries are being performed for the first time.

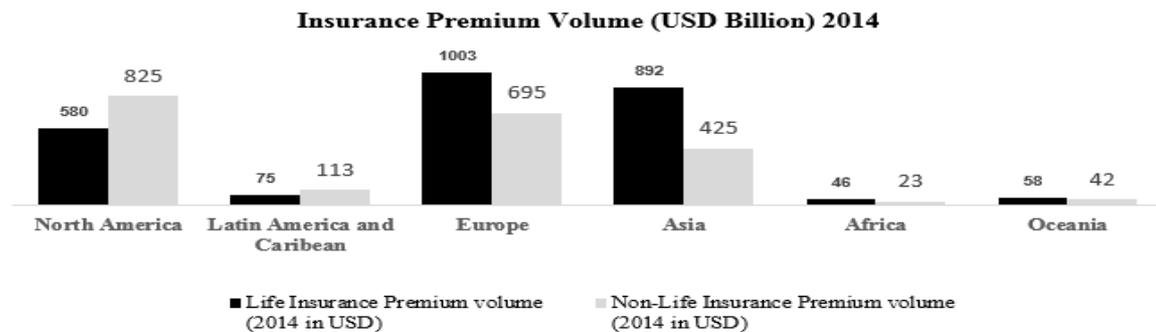
Independent variables, such as the Global Competitiveness Index from World Economic Forum Global Competitiveness Report, consumer price index are for the first time introduced in the econometric analysis on insurance consumption in Europe.

Study for the first time is conducted for 2009-2014 which is the post financial crisis period in Europe

In the paper section 2 focuses on the development of insurance industry in Europe followed by section 3 where past literatures are studied (both studies conducted for countries/ regions and also studies focused on Europe have been reviewed). Section 4 outlines the variables used and the data specification of the empirical model and the various research hypothesis assumed in the study. In section 5 the theoretical model is presented, in section 6 results and key findings are presented followed by the concluding remarks, acknowledgements and references.

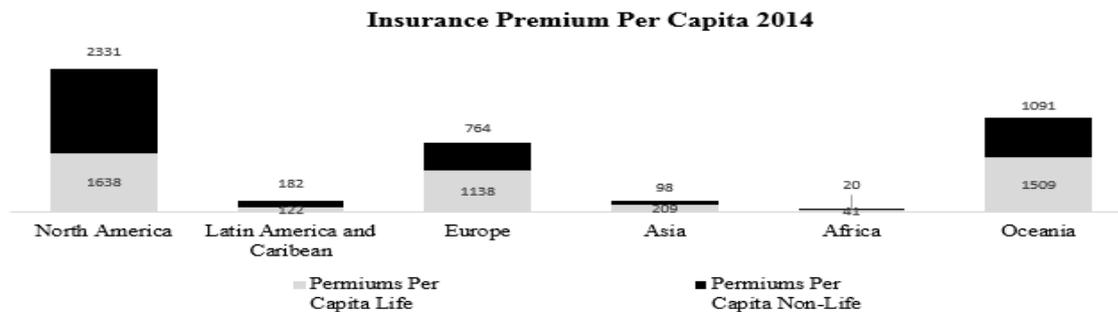
### Development of insurance Industry in Europe

With 35% of contribution to the global insurance premium Europe is the largest in the world followed by North America (29%) and Asia (27%). Insurance is a major contributor to the economic growth and development of Europe. It is a key facilitator for economic transactions within Europe by providing risk transfer and indemnification. It also promotes financial stability by providing long-term investment in the economy and provides stable and sustainable savings and pension. The insurance sector is the largest institutional investor in Europe, with almost € 9,900bn of assets under management invested in the economy in 2014. This is equivalent to 63% of the GDP of the Europe.



**Figure 1: Insurance Premium Volume (USD Billion) in 2014**

In 2014 European life premiums amounted to USD 1,002 billion an increase of 7.4% from 2013. Life insurance business contributed to 59.1% of the overall insurance business in 2014. United Kingdom with a premium volume of USD 235 million had the highest share in 2014 among the European countries at 23%, followed by France at 17%. United Kingdom was the third highest market in terms of life insurance premium globally top two markets being United States (USD 528 billion) and Japan (USD 371 billion). According to "Insurance Europe" the top five countries in Europe (United Kingdom, France, Italy, Germany and Ireland in terms of life insurance premium had a market share of 72% in Europe).



**Figure 2: Insurance Premium per Capita 2014**

Though the overall insurance premium is the highest in Europe but the premiums per capita for life insurance is USD 1138 which is less than North America (USD 1638) and Oceania (USD 1509)<sup>1</sup>. Similarly, for

the non-life insurance the premium per capita is 764 USD much lower than North America which is at USD 2331 and Oceania USD 1091. This provides further growth opportunities for companies operating in the region. There is significant disparity existing between the countries in Europe with (e.g. United Kingdom having a premium volume of USD 351 billion whereas Bulgaria has a premium volume of USD 1.18 billion which is less than an African country such as Algeria (USD 1.59 billion) in 2014. Within the region there has been uneven growth with the emerging economies within the European sub-continent showing stagnant or decline in growth compared to more developed European economies. Around 4860 companies operate in the insurance sector in Europe and employs over 1 million people directly. There are also around a million outsourced employees and independent intermediaries. Hence the insurance industry is a significant employer, both in terms of direct and indirect employment.

During the financial crisis all insurance companies operating in Europe suffered an erosion in the value of their assets, life insurers have suffered more than the non-life firms. In April 2009 the IMF projected total losses from the financial crisis of around US\$4.1 trillion, of which about two-thirds was expected to constitute write-downs by banks and one third losses suffered by insurance companies. This had impacted investor's confidence on the insurance sector Faisal, Stanley & Chris (2011).

### Literature Review

Factors impacting the investments in insurance industry has been a topic of research for many years in the financial literature. Studies have cited income, net worth holdings, stage in the life cycle, education and occupation impacting life insurance consumption Hammond (1967). Studies have observed that inflation has no significant impact on life insurance consumption Neumann (1969). Six independent variables; education, current household income, expected household income, net worth of household, husband's insurance before marriage and wife's insurance before marriage are statistically significant in explaining the life insurance consumption Anderson and Nevin(1975). Analysis of the impact of demographic and psychographic variables on demand of life insurance was performed by Burnett and Palmer (1984) and the major demographic contributors were education, number of children and income; major psychographic variables were work ethic, fatalism, socialization preference, religion salience, and assertiveness. Study of 48 developing countries was performed by Outreville (1996) and observed that the financial development of the country significantly influences the life insurance demand. Determinants of demand for life insurance in 68 economies was studied by using panel data by Beck and Webb (2003) for the period of 1961-2000 and observed that economic indicators such as income per capita, inflation, banking sector development and religious and institutional indicators are the most important variables in life insurance consumption; life expectancy, education, the young dependency ratio, the size of the social security system do not affect it. Insurance investment was examined in three countries China, Hong Kong and Taiwan by Hwang and Greenford (2005) and was observed that income, education and economic development have positive effect on demand for life insurance. One child policy and social structure have negative impact on life insurance consumption. Social security and price have no significant effect on life insurance demand. Life insurance consumption by using cross section data for 30 OECD countries was analyzed Li (2007) for the period between 1993 and 2000 and indicated that number of dependents, income, levels of financial development and education and degree of competition are positively related to life insurance demand.

Limited empirical studies exist on the impact of cultural factors on insurance consumption. Inclusion of cultural factors increases the predictive ability of the regression model on life insurance consumption by 13% was cited by Chui and Kwok (2008). Significant impact of cultural variables on non-life insurance consumption was found by Lemaire (2010). Blocking and bootstrapping statistical techniques Treerattanapun (2011) was used and significant impact of cultural factors was observed on non-life insurance consumption studying 82 countries across a 10-year period.

### Research Hypothesis

The selection of the dependent variables requires some indicators which measures the development of the insurance industry in the selected European countries. The factors assumed have been divided into the following categories:

- Insurance demand factors (dependent variables)
- Cultural factors (independent variables)
- Economic factors (independent variables)
- Demographic factors (independent variables)

Three dependent variables assumed to estimate the insurance demand are as follows. It is in the study assumed that insurance demand is impacted if any of the following variables have a significant relationship with the independent variables

**Premium volume:** Represents the total insurance premium written in a given country and is a major indicator of the significance of insurance industry and has been assumed in prior studies Babbel(1985), Beenstock, Dickinson and Khajuria(1986); Browne and Kim (1983), DePamphillis (1977), Diacon(1980), Lim and Haberman(2004), Mantis and Farmer (1968), Ward and Zurbruegg(2002), Schwebler (1984), Zhuo(1999).

**Insurance expenditure per capita (insurance density):** Calculated by dividing direct gross premiums by the population and represents average insurance spending per capita in a given region/country, has been used as the dependent variable in the previous studies by Beck and Webb (2003), Browne and Kim (1993), Hwang and Greenford (2005), Outreville(1996), Truett and Truett(2005), Zhuo(1999).

**Insurance penetration:**Ratio of direct gross premiums to GDP, indicating the relative importance of the insurance business in the given economy, and has been used in prior studies Zhang and Nong(2005).

For the independent cultural variables in the study we use Hofstede's five cultural dimensions:

**Power Distance:** Expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally. The fundamental issue here is how a society handles inequalities among people. Studies suggest that the population of a high power distance country expects their political leaders to take sufficient actions to reduce their risk Chui and Kwok (2008). The observation is ambiguous as this also occurs in a low Power Distance country. For the purpose of the study we have assumed the following hypothesis:

**H1: There is positive and statistically significant relationship between power distance and demand for life insurance.**

**Individualism:** Defined as a preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families. Its opposite, collectivism, represents a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty. We have assumed in the study the more individualistic the society is greater will be the tendency to invest in insurance products as they are dependent less on their family members.

**H2: There is positive and statistically significant relationship between individualism and demand for life insurance.**

**Masculinity:**Represents a preference in society for achievement, heroism, assertiveness and material rewards for success. Societies which are more feministic tend to invest more in insurance as they are more caring and nurturing about the people around them Chui and Kwok (2008). Similarly, a contrasting view is more a society is masculine the greater will be the tendency of the individuals to have a control over their future and hence they would invest in insurance products more. For the purpose of the study we have assumed the following hypothesis

**H3: There is positive and statistically significant relationship between masculinity and demand for life insurance.**

**Uncertainty Avoidance:**Expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. Uncertainty avoidance is correlated to risk aversion, people who are risk averse are willing to take more risk if they are compensated to do so with a maximization of the utility function. People with a high degree of uncertainty avoidance prefer well defined predictable outcome. Impact of uncertainty avoidance hence is ambiguous Treerattanapun (2011).

**H4: There is positive and statistically significant relationship between Uncertainty Avoidance and demand for life insurance.**

**Long term Orientation:**Societies who score low on this dimension prefer to maintain time honored traditions and norms while viewing societal change with suspicion. Those with a culture which scores high, on the other hand, take a more pragmatic approach: they encourage thrift and efforts in modern education as a way to prepare for the future. Prior research shows a positive impact of long term orientation and life insurance demand Park, Lemaire and Chua (2010).

**H5: There is positive and statistically significant relationship between Long Term Orientation and demand for life insurance.**

For the independent economic variables in the study we use the following indicators:

**GDP per capita:** Is an indicator of the level of economic development achieved in a country and also a possible proxy of the income levels in the country. In the study we have assumed it to have a positive impact on the insurance consumption. Prior studies which have included GDP per capita are Beenstock, Dickinson and Khajuria (1986); Browne and Kim (1993) and Outreville (1996).

**H6: There is positive and statistically significant relationship between GDP per capita and demand for life insurance.**

**Gross savings as % of GDP:** Calculated as gross national income less total consumption, plus net transfers is an indicator of the disposable income of the country. Prior research has not been able to establish any relationship between savings and demand of life insurance. Increased household assets due to greater savings may act as a household buffer and may have a negative impact on the insurance demand Headen and Finley (1974). A positive influence of savings on life insurance demand exists Schwebler (1984) and Beck and Webb (2003). In the current study we have assumed a negative impact of the indicator on insurance consumption.

**H7: There is negative and statistically significant relationship between Gross savings as % of GDP and demand for life insurance.**

**Social Security Expenditure:** There are conflicting results on the impact of social expenditure on insurance demand. Some studies indicate that in countries with higher social expenditure spend there is a lesser need for citizens to spend on life insurance Yaari (1965) hence they are negatively correlated. Social security has little net effect on life insurance demand empirically Fitzgerald (1987). The study further investigates the relation between the two and assumes that the social security expenditure and insurance demand to be negatively correlated.

**H8: There is negative and statistically significant relationship between social security expenditure and demand for life insurance.**

**Inflation:** Some studies suggest that inflation negatively impacts the demand for life insurance Hofflander and Duvall (1967), Babbal (1981); Beck and Webb (2003). Studies investigated the impact of inflation on life insurance consumption and found that inflation has no significant impact (Neumann, 1969). Since both hypothesis regarding the impact of inflation holds hence we have decided to include it in the current study where we assume the inverse of Consumer Price Index (CPI) as an indicator of inflation.

**H9: There is negative and statistically significant relationship between Inflation and demand for life insurance.**

**Global Competitiveness Index:** An annual report published by World Economic Forum (WEF) which assesses the competitiveness landscape of 140 economies, providing insights into the drivers of their productivity and prosperity. The indicator has been assumed to study the openness of the economy which would lead to greater investments of the foreign insurance companies in the country and leading to modernization and marketization of the local economy. Using competitiveness as a parameter for measuring insurance demand has not been previously done in any study. The current study assumes the global competitiveness index score to have a positive impact on insurance consumption.

**H10: There is positive and statistically significant relationship between competitiveness of countries and demand for life insurance.**

For the independent demographic variables in the study we use the following indicators:

**Population:** Size of the population is an indication of the addressable market for the insurance players in a country. Prior studies have used population as an indicator to determine insurance investment in a country/ region Mantis and Farmer (1968), Schlag (2003). In our current study we have assumed the impact of population on the demand of insurance to be positive.

**H11: There is positive and statistically significant relationship between population and demand for life insurance**

**Education:** Individual's level of education determines the level of risk aversion Schlag (2003) leading to a higher probability of buying insurance Karni and Zilcha (1986), Pratt (1964) and Szpiro (1985) and showed through their study the higher the risk aversion of an individual higher is the amount insured. However negative relationship was proven by Anderson and Nevin (1975) who found that less educated husbands tend to invest more in insurance. Possible reason being with higher education level people tend to analyze their

investments more critically and prefer to invest in other instruments which provides higher returns on investment which typically a less educated person may not be aware of.

**H12: There is positive and statistically significant relationship between education and demand for life insurance**

**Total Age Dependency Ratio:**The ratio of the total dependent young population and dependent old population to the working age population those between ages 15-64 have been assumed. The results of dependency ratio to insurance demand is inconclusive. Some studies Schlag (2003) indicate a positive relationship while others were inconclusive on the impact of total age dependency ratio. For the current study we assume a positive significant relationship.

**H13: There is positive and statistically significant relationship between age dependency ratio and demand for life insurance**

**Life expectancy:**The factor is assumed for analyzing the demand of life insurance. Countries with higher life expectancy tend to have a lower demand for life insurance. Studies contradicted the above point of view and observed that life expectancy and life insurance demand are positively correlated because of the high savings element Beenstock, Dickinson and Khajuria (1986) and Outreville(1996).

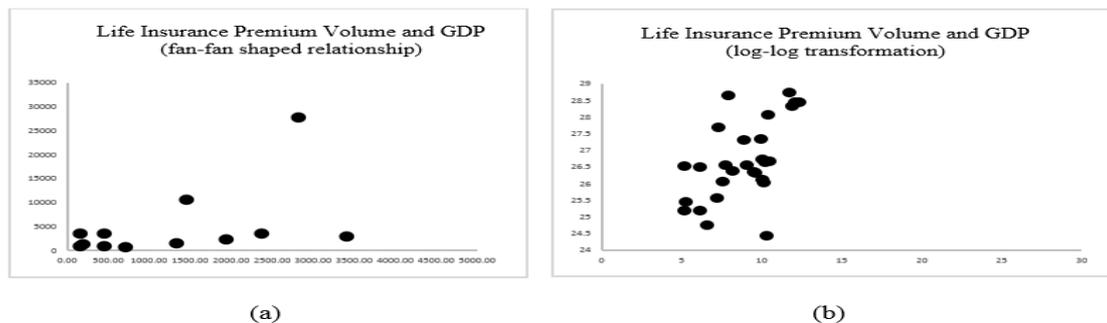
**H14: There is positive and statistically significant relationship between life expectancy and demand for life insurance**

### Theoretical Framework and Methodology

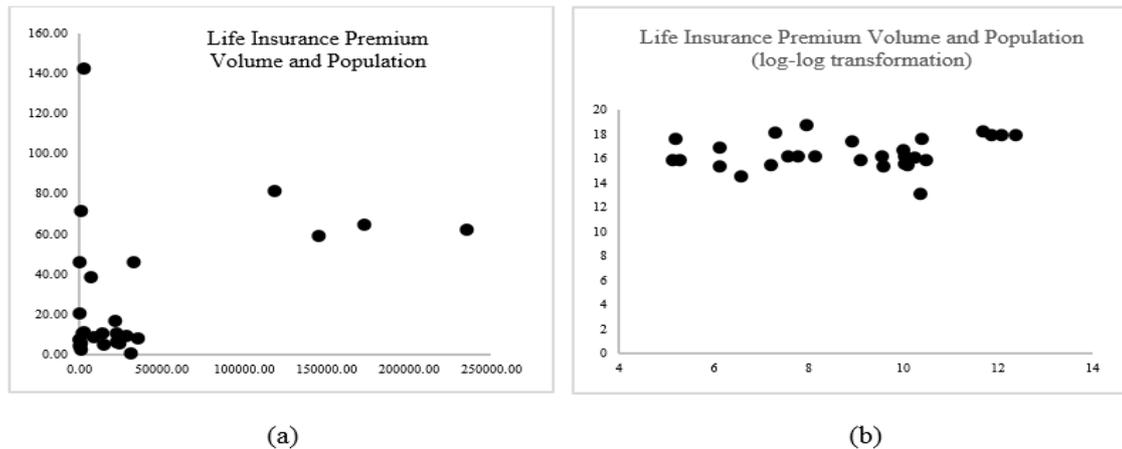
In order to counter the impact of endogeneity we follow the method of lagged variables whereby we assume any changes in the socio-economic conditions in a country will impact the insurance demand in a time difference. Hence to incorporate the time lag impact we have assumed the socio-economic 14 independent variables for the year 2009 and the dependent insurance demand variables for the year 2014. The values related to the cultural factors have been considered to be constant during the period with the assumption that national cultures are stable over time Hofstede (2003). Assuming the time period of the study from 2009-2014 also incorporates the development of the insurance industry post financial crisis which had a significant impact on the European economy.

In the current study we use the Swiss Re “World Insurance in 2014: back to life” report for insurance consumption data for 28 European countries. The report is published annually and provides a comprehensive coverage of the insurance consumption, market trends for 84 countries globally. We use the cross section data for 16 countries from Western Europe and 12 countries from Central and Eastern Europe to ensure we do not have any regional bias.

Figures 3(a) and 4(a) shows a fan-shaped relationship between life insurance premium volume and GDP per capita and Population respectively which under the log-log transformation becomes more homoscedasticity as shown in Figures 3(b) and 4(b). Though in the presence of homoscedasticity the estimators are unbiased, the standard errors will be underestimated thus the t-statistics will be inaccurate resulting in a possible wrong conclusion regarding the significance of explanatory variables. Therefore the log-log transformation is employed Treerattanapun, (2011). Log-log transformations are assumed for GDP, inflation and population independent variables.



**FIGURE 3. Life Insurance Premium and GDP Volume Fan-Fan shaped Relationship and Log-Log Transformation**



**FIGURE 4.** Life Insurance Premium Volume and Population Fan-Fan shaped Relationship and Log-Log Transformation

We estimate the following model with Ordinary Least Squares (OLS) to investigate the impact of the 14 independent variables on each of the three dependent variable. A multivariate regression analysis is performed for each of the equations below:

$$\begin{aligned} \log(LIPV) = & \beta_0 + \beta_1(PD) + \beta_2(IDV) + \beta_3(MASC) + \beta_4(UNCAVD) + \beta_5(LTO) + \beta_6 \log(GDP) \\ & + \beta_7(GROSSSAV) + \beta_8(SOCIALEXP) + \beta_9 \log(INFL) + \beta_{10}(GCI) + \beta_{11} \log(POP) \\ & + \beta_{12}(EDU) + \beta_{13}(TADR) + \beta_{14}(LIFEEXP) + \varepsilon_t \end{aligned} \quad (1)$$

$$\begin{aligned} \log(LID) = & \beta_0 + \beta_1(PD) + \beta_2(IDV) + \beta_3(MASC) + \beta_4(UNCAVD) + \beta_5(LTO) + \beta_6 \log(GDP) \\ & + \beta_7(GROSSSAV) + \beta_8(SOCIALEXP) + \beta_9 \log(INFL) + \beta_{10}(GCI) + \beta_{11} \log(POP) \\ & + \beta_{12}(EDU) + \beta_{13}(TADR) + \beta_{14}(LIFEEXP) + \varepsilon_t \end{aligned} \quad (2)$$

$$\begin{aligned} \log(LIP) = & \beta_0 + \beta_1(PD) + \beta_2(IDV) + \beta_3(MASC) + \beta_4(UNCAVD) + \beta_5(LTO) + \beta_6 \log(GDP) \\ & + \beta_7(GROSSSAV) + \beta_8(SOCIALEXP) + \beta_9 \log(INFL) + \beta_{10}(GCI) + \beta_{11} \log(POP) \\ & + \beta_{12}(EDU) + \beta_{13}(TADR) + \beta_{14}(LIFEEXP) + \varepsilon_t \end{aligned} \quad (3)$$

LIPV: Life insurance premium volume (Source: "World insurance in 2014: back to life" published by Swiss Re)

LID: Life insurance density (Source: "World insurance in 2014: back to life" published by Swiss Re)

LIP: Life insurance penetration (Source: "World insurance in 2014: back to life" published by Swiss Re)

PD: Power Distance (Source: Hofstede's Cultural Dimensions)

IDV: Individualism (Source: Hofstede's Cultural Dimensions)

MASC: Masculinity (Source: Hofstede's Cultural Dimensions)

UNCAVD: Uncertainty Avoidance (Source: Hofstede's Cultural Dimensions)

LTO: Long Term Orientation (Source: Hofstede's Cultural Dimensions)

GDP: GDP per capita (Source: World Bank Indicators)

GROSSSAV: Gross Savings as % of GDP (Source: World Bank Indicators)

SOCIALEXP: Expenditure for Social Insurance and Welfare to GDP Ratio (Source: OECD Social Expenditure Database)

INFL: Inflation Indicated by (1/Consumer Price Index) (Source: World Bank Indicators)  
 GCI: World Global Competitiveness Index (Source: World Economic Forum Competitiveness Index)  
 POP: Population (Source: World Bank Indicators)  
 EDU: Gross Enrolment Ratio, tertiary both Sexes (%) (Source: World Bank Indicators)  
 TADR: Total Age Dependency Ratio (% of working-age population) (Source: World Bank Indicators)  
 LIFEXP: life Expectancy (Source: World Bank Indicators)

## Results and Discussions

**TABLE 1.** Determinants of the development of life insurance.

t-statistics are in brackets. \*\*\* Significance at 1%, \*\* significance at 5%, \* significance at 10%. Adjusted R<sup>2</sup> ranges from 90~95% indicating good-fit of regression

	Premium Volume		Insurance Density		Insurance Penetration	
<b>Power Distance</b>	0.010		0.014	*	0.008	
	(1.083)		(1.903)		(1.118)	
<b>Individualism</b>	0.022	**	0.021	**	0.021	**
	(2.081)		(2.431)		(2.615)	
<b>Masculinity/femininity</b>	0.000		0.008		0.005	
	(0.022)		(1.519)		(0.916)	
<b>Uncertainty avoidance</b>	0.004		0.002		0.004	
	(0.416)		(0.234)		(0.624)	
<b>Long-Term Orientation</b>	0.022	**	0.028	***	0.020	**
	2.090		3.279		2.560	
<b>GDP Per Capita</b>	2.420	***	1.582	***	0.275	
	(4.189)		(3.323)		(0.628)	
<b>Gross savings (% of GDP)</b>	-0.061	**	-0.023		-0.037	**
	(-2.525)		(-1.168)		(-2.030)	
<b>Expenditure for social insurance and welfare to GDP ratio</b>	0.049		0.038		0.025	
	(1.274)		(1.190)		(0.856)	
<b>Inflation</b>	-9.391		-18.420	**	-25.152	***
	(-1.026)		(-2.441)		(-3.627)	
<b>Global Competitiveness Index</b>	1.083	**	1.251	***	0.833	**
	(2.177)		(3.051)		(2.211)	
<b>Population</b>	1.590	***	1.637	***	0.313	
	(2.944)		(3.678)		(0.764)	
<b>Education</b>	-0.017	**	-0.000		0.002	
	(-2.200)		(-0.012)		(0.293)	
<b>Age dependency ratio (% of working-age population)</b>	-0.023		0.024		0.026	
	(-0.512)		(0.637)		(0.774)	
<b>Life expectancy</b>	0.040		0.041		-0.001	
	(-0.470)		(0.583)		(-0.017)	
<b>R<sup>2</sup></b>	0.972		0.980		0.953	
<b>Adjusted R<sup>2</sup></b>	0.941		0.957		0.903	
<b>Number of Observations</b>	28		28		28	
<b>Economic Variables</b>						

Life insurance demand shows a significant positive relationship with GDP per capita which is consistent with the observations of Beenstock, Dickinson and Khajuria (1986); Browne and Kim (1993); Outreville (1996). Higher GDP is an indicator of higher wage and higher levels of economic activity within the country which has a positive impact on the insurance demand hence hypothesis H6 is proven true. Insurance premium volume has a significant negative relationship with Gross savings (%) of GDP which is consistent with the observations of Headen and Finley (1974). Observation supports the theory that the higher savings achieved acts as a buffer in case of need hence reducing the significance for investments in life insurance hence hypothesis H7 is proven true. Inflation has a high significant negative impact on both insurance density and insurance penetration. The observations are consistent with Babbel (1981) and Outreville (1996) and Çelik and Mustafa (2009). Studies explain that inflation with constraining regulations can lead to higher perceived real costs of life insurance Babbel (1981). So, life insurance demand decreases in inflationary periods, hence hypothesis H9 is proven true. With increasing debt problems post financial crisis many of the European countries had higher inflation rates which impacted insurance demand. Life insurance demand shows a significant positive relationship with Global Competitiveness Index which is an indicator of the openness of an economy and the ability to attract investments. Countries which have a more competitive environment attract more insurance companies to operate and have higher levels of insurance demand, hence hypothesis H10 is proven true. Social expenditure variable did not show any significant relationship with insurance demand which is consistent with the observation of Fitzgerald (1987).

#### **Demographic Variables**

Both life insurance premium volume and life insurance density have a positive significant relationship with population which is consistent with the observations of Mantis and Farmer (1968), Schlag (2003). Both GDP per capita and high population having significant positive relationship with insurance demand indicates a higher addressable market for insurance companies to target, hence hypothesis H11 is proven true. Insurance premium volume has a significant negative relationship with levels of education which is consistent with Anderson and Nevin (1975). This contradicts our hypothesis H12. Both dependency ratio and life expectancy did not show any significant relationship and their impact was inconclusive in the study as has been the case in many prior research.

#### **Cultural Variables**

The results indicate the relationship between the cultural factors and the life insurance demand and presents interesting observations. For Power Distance there is no significant relationship across all of the insurance demand parameters for the selected countries. Countries with high levels of individualism score have higher insurance demand across all the demand parameters (volume, density and penetration). More the society is individualistic the more will be the tendency of individuals to protect themselves through a life insurance cover hence the insurance demand will be higher. In a collectivist society there is greater dependence among the members of the families/societies and hence the dependence on insurance protection is lesser. This proves our hypothesis H2 true. Long term orientation positively impacts the insurance demand which supports H5 which is in-line to prior research done in the field by Park, Lemaire and Chua (2010). The greater a society is long term oriented higher will be the propensity of the society to invest in long term life insurance products. This would positively impact the sales of the life insurance products in a long term oriented society. No significant relationship exists between masculinity and uncertainty avoidance variables.

#### **Conclusions**

This study extends the literature on insurance demand determinants by investigating a larger number of countries focused in Europe and includes cultural, economic and demographic parameters (total 14 independent variables) in the study.

For life insurance in the European countries GDP per capita positively impacts insurance volume and density and competitiveness of the countries positively impacts all the insurance demand parameters. On the contrary the inflation impacts negatively the insurance density and insurance volume while gross savings negatively impacts the insurance volume and penetration. These observations have an important implication for companies exploring investment opportunities in the region. Especially when companies are looking to invest in the emerging Central and Eastern European countries these economic indicators provide a basis for prioritization of the markets and also determine the timing of entry.

In case of demographic parameters, the population impacts positively the insurance volume and insurance density while education impacts negatively the insurance volume. For cultural factors individualism

and long term orientation impacts positively all insurance parameters. Many of the observations are in line with the prior studies conducted in the field.

Many of the selected economies especially the ones in Central and Eastern Europe have undergone changes, particularly in regulatory reforms recently. The current study provides information on the determinants of insurance demand in the region. The current study limits itself to a macro level analysis of the insurance demand. Further detailed analysis can be performed on individual life insurance products which may result in more reliable findings. Future studies can further segregate the region into developed and developing economies and conduct a detailed time series analysis and incorporate both pre-crisis and post-crisis period. Culture which has been assumed to be constant may be an over simplification, socio-economic conditions may result in cultural changes hence it may not be static. Future studies can factor the dynamic nature of national culture.

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